Galaxy
SCIENCE FICTION

NOVEMBER 1952
35¢

THE MARTIAN WAY

By ISSAAC ASIMOV

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THE CITY IN THE SEA

by WILSON TUCKER

●

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CONTENTS

NOVELLA

THE MARTIAN WAY..... *by Isaac Asimov* 4

NOVELETS

SUGAR PLUM..... *by R. Bretnor* 62

COMMAND PERFORMANCE..... *by Walter M. Miller, Jr.* 140

SHORT STORIES

WARRIOR RACE..... *by Robert Sheckley* 50

A THOUGHT FOR TOMORROW..... *by Robert E. Gilbert* 83

THE ALTAR AT MIDNIGHT..... *by C. M. Kornbluth* 95

THE MISOGYNIST..... *by James E. Gunn* 111

RUNAWAY..... *by William Morrison* 126

SCIENCE DEPARTMENT

FOR YOUR INFORMATION..... *by Willy Ley* 102

FEATURES

EDITOR'S PAGE..... *by H. L. Gold* 2

GALAXY'S FIVE STAR SHELF..... *by Groff Conklin* 121

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THE NEXT VOICE

READING Willy Ley's statement that sound dies for good was disconcerting for a moment. It means we have to give up hope of eavesdropping on history, the basis of some fine stories.

But great moments have a way of not being recognized by their contemporaries. I mean the truly great moments, when the course of mankind was actually changed. The melodramatic ones produce such thoughtful arias as, "On this momentous occasion, we owe an everlasting debt to the men who—" and similar overevaluations.

Our era has undoubtedly had more stupendous developments per square minute than any other, which may account for our often jaded reaction to almost anything that happens. A great moment has to jut out like an island in time to be viewed with proper awe. But it isn't easy to do so when you're standing on the island.

Supposing that we *could* recapture the voices of the past, what would we be likely to hear? I have a suspicion it might be something like this:

• Adam awakening to find that Eve had been created from his rib: "Huh?"

• Mankind's first giant step forward in his conquest of nature, the discovery of fire: "Ouch!"

• Invention of the wheel, the basis of all engineering: "Get that squeaking thing out of here—it's scaring the deer!"

• The placing of the capstone on the Great Pyramid: "Well, one thing you got to admit, it gives a lot of shade."

• Sinking of Atlantis: "Glad I didn't own any real estate out there."

• Caesar's triumphal return to Rome: "Hey, that Helvetian babe ain't bad."

• The first landing in the New World: "I'll bet I never get used to walking on the ground again."

• Invention of movable type, foundation of universal literacy: "How do you get this ink off your hands?"

• Defeat of the Armada: "Look! Firewood!"

• Invention of the telephone, bridge between the continents: "Speak up. I can't hear a word you're saying."

• Discovery of radium, direct forerunner of atomic power: "Their back yard is a mess with all that slag they dumped."

• Invasion of *Festung Europa*: "Ah, nuts! I'm clean out of cigarettes!"

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• First A-bomb in the desert of New Mexico: "Sand in your hair, sand in your food—"

Of course it sounds absurd, but with what memorable words did *you* greet the many historic moments of the past few years? "I shall return!" was not exactly the emotion we dogfaces felt when we hit the beaches in the Pacific. In my case it was a distinct unhappiness with landing craft. But then I remember somebody wondering, "You think they have cows here?" and the thought of fresh milk became the most important thing in my life at the time.

How many famous utterances do you suppose were made *after* the utterer first said, "There goes my last pair of clean socks," or, "As long as I have my health, what do I care if the stock market crashed?"

No matter what the event, people generally talk like people instead of having an eye on the history books of the future. Excluding the birth of my son, I don't believe I was ever more stunned than the time I saw *four* rainbows at *one time* in a valley on Luzon. The whole squad paused and gaped, and "Gosh!" was the only printable awed remark.

The sad fact is that human languages are incapable of conveying really great emotion.

FOR that matter, sustaining a sense of wonder indefinitely is impossible. Today it feels as if we've always had atomic fission, rockets, antibiotics and all the rest of our warehouse of marvels.

As for the superficially disappointing reactions we'd hear if we tuned in on the past, they would actually be rewarding for their pure humanness.

I'm waiting for somebody to protest, as the first ship takes off for the Moon, "With that thing spitting fire, I'm not allowed to smoke here?" That, not the blatting of politicians, will establish the great date.

The quote children will have to memorize might be, "Man has placed his foot on the rung of the Universe," etc. But the genuine first remark on landing will more probably be, "Stop shoving! Think I want to break a leg this far from home?"

He'd be right. Who would?

And our colonists, after the excitement dies down and living on an alien world becomes a savage reality, will do a good deal more griping about being stuck out there, away from decent food, women and a place to spend money—yes, in the order named—than gabbing about their historic mission.

What's more, so would you and I. The oratory comes later.

—H. L. GOLD

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The Martian Way

It was junk they hunted, but enormously valuable and urgently needed junk that cost only bravery and the cheapest fuel . . . yet they were kept from collecting it by an even cheaper lie!

I

FROM the doorway of the short corridor between the only two rooms in the travel-head of the spaceship, Mario Esteban Rioz watched sourly as Ted Long adjusted the video dials painstakingly. Long tried a touch clockwise, then a touch counter. The picture was lousy.

Rioz knew it would stay lousy. They were too far from Earth and at a bad position facing the Sun. But then Long would not be expected to know that. Rioz remained standing in the doorway for an additional moment, head bent to clear the upper lintel, body turned half sidewise to fit the narrow opening. Then he jerked into the galley like a cork popping out of a bottle.

"What are you after?" he asked.

"I thought I'd get Hilder," said Long.

Rioz propped his rump on the corner of a table-shelf. He lifted a conical can of milk from the companion shelf just above his head. Its point popped under pressure. He swirled it gently as

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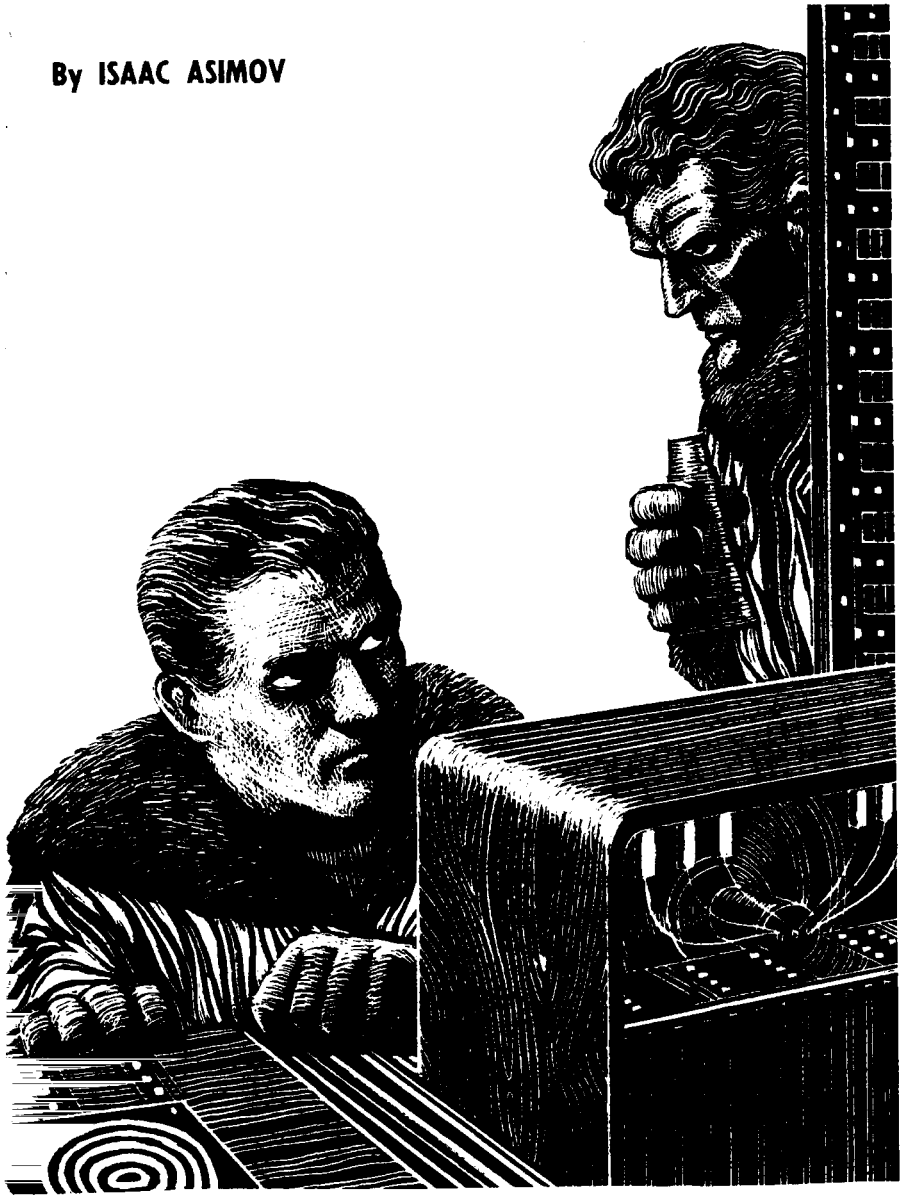
By ISAAC ASIMOV



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he waited for it to warm.

"What for?" he said. He upended the cone and sucked noisily.

"Thought I'd listen."

"I think it's a waste of power."

Long looked up, frowning. "It's customary to allow free use of personal video sets."

"Within reason," retorted Rioz.

THEIR eyes met challengingly. Rioz had the rangy body, the gaunt, cheek-sunken face that was almost the hallmark of the Martian Scavenger, those Spacers who patiently haunted the space routes between Earth and Mars. Pale blue eyes were set keenly in the brown, lined face which, in turn, stood darkly out against the white, surrounding syntho-fur that lined the upturned collar of his leathtic space-jacket.

Long was altogether paler and softer. He bore some of the marks of the Grounder, although no second-generation Martian could be a Grounder in the sense that Earthmen were. His own collar was thrown back and his dark brown hair freely exposed.

"What do you call within reason?" demanded Long.

Rioz's thin lips grew thinner. He said, "Considering that we're not even going to make expenses this trip, the way it looks, any power drain at all is outside reason."

Long said, "If we're losing money, hadn't you better get back to your post? It's your watch."

Rioz grunted and ran a thumb and forefinger over the stubble on his chin. He got up and trudged to the door, his soft, heavy boots muting the sound of his steps. He paused to look at the thermostat, then turned with a flare of fury.

"I *thought* it was hot. Where do you think you are?"

Long said, "Forty degrees isn't excessive."

"For you it isn't, maybe. But this is space, not a heated office at the iron mines." Rioz swung the thermostat control down to minimum with a quick thumb movement. "Sun's warm enough."

"The galley isn't on Sunside."

"It'll percolate through, damn it."

Rioz stepped through the door and Long stared after him for a long moment, then turned back to the video. He did not turn up the thermostat.

The picture was still flickering badly, but it would have to do. Long folded a chair down out the wall. He leaned forward waiting through the formal announcement, the momentary pause before the slow dissolution of the curtain, the spotlight picking out the well-known bearded figure which grew as it was

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brought forward until it filled the screen.

The voice, impressive even through the flutings and croakings induced by the electron storms of twenty millions of miles, began:

"Friends! My fellow-citizens of Earth—"

II

RIOZ'S eye caught the flash of the radio signal as he stepped into the pilot room. For one moment the palms of his hands grew clammy when it seemed to him that it was a radar pip; but that was only his guilt speaking. He should not have left the pilot room while on duty, theoretically, though all Scavengers did it. Still, it was the standard nightmare, this business of a strike turning up during just those five minutes when one knocked off for a quick coffee because it seemed certain that space was clear. And the nightmare had been known to happen, too.

Rioz threw in the multi-scanner. It was a waste of power, but while he was thinking about it, he might as well make sure.

Space was clear except for the far distant echoes from the neighboring ships on the scavenging line.

He hooked up the radio circuit, and the blond, long-nosed head of Richard Swenson, co-pilot of the next ship on the Marsward side, filled it.

"Hey, Mario," said Swenson.

"Hi. What's new?"

There was a second and a fraction of pause between that and Swenson's next comment, since the speed of electromagnetic radiation is not infinite.

"What a day I've *had*."

"Something happened?" Rioz asked.

"I had a strike."

"Well, good."

"Sure, if I'd roped it in," said Swenson morosely.

"What happened?"

"Damn it, I headed in the wrong direction."

Rioz knew better than to laugh. He said, "How did you do that?"

"It wasn't my fault. The trouble was the shell was moving way out of the ecliptic. Can you imagine the stupidity of a pilot that can't work the release maneuver decently? How was I to know? I got the distance of the shell and let it go at that. I just assumed its orbit was in the usual trajectory family. Wouldn't you? I started along what I thought was a good line of intersection and it was five minutes before I noticed the distance was still going up. The pips were taking their sweet time returning. So then I took the angular projections of the thing, and it

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was too late to catch up with it."

"Any of the other boys getting it?"

"No. It's way out of the ecliptic and'll keep on going forever. That's not what bothers me so much. It was only an inner shell. But I hate to tell you how many tons of propulsion I wasted getting up speed and then getting back to station. You should have heard Canute."

Canute was Richard Swenson's brother and partner.

"Mad, huh?" said Rioz.

"Mad? Like to have killed me! But then we've been out five months now and it's getting kind of sticky. You know."

"I know."

"How are you doing, Mario?"

Rioz made a spitting gesture. "About that much this trip. Two shells in the last two weeks and I had to chase each one for six hours."

"Big ones?"

"Are you kidding? I could have scaled them down to Phobos by hand. This is the worst trip I've ever had."

"How much longer are you staying?"

"For my part, we can quit tomorrow. We've only been out two months and it's got so I'm chewing Long out all the time."

There was a pause over and above the electromagnetic lag.

Swenson said, "What's he like, anyway? Long, I mean."

Rioz looked over his shoulder. He could hear the soft, crackly mutter of the video in the galley. "I can't make him out. He says to me about a week after the start of the trip, 'Mario, why are you a Scavenger?' I just look at him and say, 'To make a living. Why do you suppose?' I mean, what the hell kind of a question is that? Why is anyone a Scavenger?

"Anyway, he says, 'That's not it, Mario.' *He*'s telling *me*, you see. He says, 'You're a Scavenger because this is part of the Martian way.' "

Swenson said, "And what did he mean by that?"

Rioz shrugged. "I never asked him. Right now he's sitting in there listening to the ultra-microwave from Earth. He's listening to some Grounder called Hilder."

"Hilder? A Grounder politician, an Assemblyman or something, isn't he?"

"That's right. At least, I think that's right. Long is always doing things like that. He brought about fifteen pounds of books with him, all about Earth. Just plain dead weight, you know."

"Well, he's your partner. And talking about partners, I think I'll get back on the job. If I miss another strike, there'll be murder around here."

He was gone and Rioz leaned

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back. He watched the even green line that was the pulse-scanner. He tried the multi-scanner a moment. Space was still clear.

HE felt a little better. A bad spell is always worse if the Scavengers all about you are pulling in shell after shell; if the shells go spiraling down to the Phobos scrap - forges with everyone's brand welded on except your own. Then, too, he had managed to work off some of his resentment toward Long.

It was a mistake, teaming up with Long. It was always a mistake to team up with a tenderfoot. They thought what you wanted was conversation, especially Long, with his eternal theories about Mars and its great new role in human progress. That was the way he said it—Human Progress; the Martian Way; the New Creative Minority. And all the time what Rioz wanted wasn't talk, but a strike, a few shells to call their own.

At that, he hadn't any choice, really. Long was pretty well known down on Mars and made good pay as a mining engineer. He was a friend of Commissioner Sankov and he'd been out on one or two short scavenging missions before. You can't turn a fellow down flat before a tryout, even though it did look funny. Why should a mining engineer with a comfortable job and good money want to muck around in space?

Rioz never asked Long that question. Scavenger partners are forced too closely together to make curiosity desirable, or sometimes even safe. But Long talked so much that he answered the question.

"I had to come out here, Mario," he said. "The future of Mars isn't in the mines; it's in space."

Rioz wondered how it would be to try a trip alone. Everyone said it was impossible. Even discounting lost opportunities when one man had to go off watch to sleep or attend to other things, it was well known that one man alone in space would become intolerably depressed in a relatively short while.

Taking a partner along made a six-month trip possible. A regular crew would be better, but no Scavenger could make money on a ship large enough to carry one. The capital it would take in propulsion alone!

Even two didn't find it exactly fun in space. Usually, you had to change partners each trip and you could stay out longer with some than with others. Look at Richard and Canute Swenson. They teamed up every five or six trips because they were brothers. And yet whenever they did, it was a case of constantly mount-

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ing tension and antagonism after the first week.

Oh, well. Space was clear. Rioz would feel a little better if he went back in the galley and smoothed down some of the bickering with Long. He might as well show he was an old spacehand who took the irritations of space as they came.

He stood up, walked the three steps necessary to reach the short, narrow corridor that tied together the two rooms of the spaceship.

III

ONCE again, Rioz stood in the doorway for a moment, watching. Long was intent on the flickering screen.

Rioz said, gruffly, "I'm shoving up the thermostat. It's all right—we can spare the power."

Long nodded. "If you like."

Rioz took a hesitant step forward. Space was clear, so to hell with sitting and looking at a blank, green, pipless line. He said, "What's the Grounder been talking about?"

"History of space travel, mostly. Old stuff, but he's doing it well. He's giving the whole works—color cartoons, trick photography, stills from old films, everything."

As if to illustrate Long's remarks, the bearded figure faded out of view, and a cross-sectional view of a spaceship flitted onto the screen. Hilder's voice continued, pointing out features of interest that appeared in schematic color. The communications system of the ship outlined itself in red as he talked about it, the storerooms, the proton micro-pile drive, the cybernetic circuits—

Then Hilder was back on the screen. "But this is only the travel-head of the ship. What moves it? What gets it off the Earth?"

Everyone knew what moved a spaceship, but Hilder's voice was like a drug. He made spaceship propulsion sound like the secret of the ages, like an ultimate revelation. Even Rioz felt a slight tingling of suspense, though he had spent the greater part of his life aboard ship.

Hilder went on. "Scientists call it different names. They call it the Law of Action and Reaction. Sometimes they call it Newton's Third Law. Sometimes they call it Conservation of Momentum. But we don't have to call it any name. We can just use our common sense. When we swim, we push water backward and move forward ourselves. When we walk, we push back against the ground and move forward. When we fly a gyro-flivver, we push air backward and move forward.

"Nothing can move forward unless something else moves

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backward. It's the old principle of 'You can't get something for nothing.'

"Now imagine a spaceship that weighs a hundred thousand tons lifting off Earth. To do that, something else must be moved downward. Since a spaceship is extremely heavy, a great deal of material must be moved downward. So much material, in fact, that there is no place to keep it all aboard ship. A special compartment must be built behind the ship to hold it."

Again Hilder faded out and the ship returned. It shrank and a truncated cone appeared behind it. In bright yellow, words appeared within it: MATERIAL TO BE THROWN AWAY.

"But *now*," said Hilder, "the total weight of the ship is much greater. You need still more propulsion and still more."

The ship shrank enormously to add on another larger shell and still another immense one. The ship proper, the travel-head, was a little dot on the screen, a glowing red dot.

Rioz said, "Hell, this is kindergarten stuff."

"Not to the people he's speaking to, Mario," replied Long. "Earth isn't Mars. There must be billions of Earth people who've never even seen a spaceship; don't know the first thing about it."

Hilder was saying, "When the material inside the biggest shell is used up, the shell is detached. It's thrown away, too."

The outermost shell came loose, wobbled about the screen.

"Then the second one goes," said Hilder, "and then, if the trip is a long one, the last is ejected."

The ship was just a red dot now, with three shells shifting and moving, lost in space.

Hilder said, "These shells represent a hundred thousand tons of tungsten, magnesium, aluminum, and steel. They are gone forever from Earth. Mars is ringed by scavengers, waiting along the routes of space travel, waiting for the cast-off shells, netting and branding them, saving them for Mars. Not one cent of payment reaches Earth for them. They are salvage. They belong to the ship that finds them."

RIOZ said, "We risk our investment and our lives. If we don't pick them up, no one gets them. What loss is that to Earth?"

"Look," said Long, "he's been talking about nothing but the drain that Mars, Venus and the Moon put on Earth. This is just another item of loss."

"They'll get their return. We're mining more iron every year."

"And most of it goes right back into Mars. If you can believe

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his figures, Earth has invested two hundred billion dollars in Mars and received back about five billion dollars worth of iron. It's put five hundred billion dollars into the Moon and gotten back a little over twenty-five billion dollars of magnesium, titanium and assorted light metals. It's put fifty billion dollars into Venus and gotten back nothing. And that's what the taxpayers of Earth are really interested in—tax money out; nothing in."

The screen was filled, as he spoke, with diagrams of the scavengers on the route to Mars; little, grinning caricatures of ships, reaching out wiry, tenuous arms that groped for the tumbling, empty shells, seizing and snaking them in, branding them MARS PROPERTY in glowing letters, then scaling them down to Phobos.

Then it was Hilder again. "They tell us eventually they will return it all to us. Eventually! Once they are a going concern! We don't know when that will be. A century from now? A thousand years? A million? 'Eventually.' Let's take them at their word. Some day they will give us back all our metals. Some day they will grow their own food, use their own power, live their own lives.

"But one thing they can never return. Not in a hundred million years. *Water!*

"Mars has only a trickle of water because it is too small. Venus has no water at all because it is too hot. The Moon has none because it is too hot and too small. So Earth must supply not only drinking water and washing water for the Spacers, water to run their industries, water for the hydroponic factories they claim to be setting up—but even water to throw away by the millions of tons.

"What is the propulsive force that spaceships use? What is it they throw out behind so that they can accelerate forward? Once it was the gases generated from explosives. That was very expensive. Then the proton micropile was invented—a cheap power source that could heat up any liquid until it was a gas under tremendous pressure. What is the cheapest and most plentiful liquid available? Why, water, of course.

"Each spaceship leaves Earth carrying nearly a million tons—not pounds, *tons*—of water, for the sole purpose of driving it into space so that it may speed up or slow down.

"Our ancestors burned the oil of Earth madly and wilfully. They destroyed its coal recklessly. We despise and condemn them for that, but at least they had this excuse—they thought that when the need arose, substitutes would be found. And they

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were right. We have our plankton farms and our proton micro-piles.

"But there is no substitute for water. None! There never can be. And when our descendants view the desert we will have made of Earth, what excuse will they find for us? When the droughts come and grow—"

LONG leaned forward and turned off the set. He said, "That bothers me. The damn fool is deliberately—What's the matter?"

Rioz had risen uneasily to his feet. "I ought to be watching the pips."

"The hell with the pips." Long got up likewise, followed Rioz through the narrow corridor and stood just inside the pilot room. "If Hilder carries this through, if he's got the guts to make a real issue out of it—*Wow!*"

He had seen it, too. The pip was a Class A, racing after the outgoing signal like a greyhound after a mechanical rabbit.

Rioz was babbling, "Space was clear, I tell you, *clear*. For Mars' sake, Ted, don't just freeze on me. See if you can spot it visually."

Rioz was working speedily and with an efficiency that was the result of nearly twenty years of scavenging. He had the distance in two minutes. Then, remembering Swenson's experience, he measured the angle of declination and the radial velocity as well.

He yelled at Long, "One point seven six radians. You can't miss it, man."

Long held his breath as he adjusted the vernier. "It's only half a radian off the Sun. It'll only be crescent-lit."

He increased magnification as rapidly as he dared, watching for the one "star" that changed position and grew to have a form, revealing itself to be no star.

"I'm starting, anyway," said Rioz. "We can't wait."

"I've got it. I've got it." Magnification was still too small to give it a definite shape, but the dot Long watched was brightening and dimming rhythmically, as the shell rotated and caught sunlight on cross-sections of cyclically different sizes.

"Hold on."

The first of many fine spurts of steam squirted out of the proper vents, leaving long trails of micro-crystals of ice, gleaming mistily in the pale beams of the distant Sun. They thinned out for a hundred miles or more. One spurt, then another, then another, as the Scavenger ship moved out of its stable trajectory and took up a course tangential to that of the shell.

"It's moving like a comet at perihelion!" yelled Rioz. "Those damned Grounder pilots knock

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the shells off that way on purpose. I'd like to—"

He swore his anger in a frustrated frenzy as he kicked steam backward and backward recklessly, till the hydraulic cushioning of his chair had soughed back a full foot and Long had found himself all but unable to maintain his grip on the guard rail.

"Have a heart," he begged.

But Rioz had his eye on the pips. "If you can't take it, man, stay on Mars!" The steam spurts continued to boom distantly.

The radio came to life. Long managed to lean forward through what seemed like molasses and closed contact. It was Swenson, eyes glaring.

Swenson yelled, "Where the hell are you guys going? You'll be in my sector in ten seconds."

Rioz said, "I'm chasing a shell."

"In *my* sector?"

"It started in mine and you're not in position to get it. Shut off that radio, Ted."

THE ship thundered through space, a thunder that could be heard only within the hull. And then Rioz cut the engines in stages large enough to make Long flail forward. The sudden silence was more ear-shattering than the noise that had preceded it.

Rioz said, "All right. Let me have the 'scope."

They both watched. The shell was a definite truncated cone now, tumbling with slow solemnity as it passed along among the stars.

"It's a Class A shell, all right," said Rioz, with satisfaction. A giant among shells, he thought. It would put them into the black.

Long said, "We've got another pip on the scanner. I think it's Swenson taking after us."

Rioz scarcely gave it a glance. "He won't catch us."

The shell grew larger still, filling the visiplate.

Rioz's hands were on the harpoon lever. He waited, adjusted the angle microscopically twice, played out the length allotment. Then he yanked, tripping the release.

For a moment, nothing happened. Then a metal mesh cable snaked out onto the visiplate, moving toward the shell like a striking cobra. It made contact, but it did not hold. If it had been designed to hold, it would have snapped instantly like a cobweb strand. The shell was turning with a rotational momentum amounting to thousands of tons. What the cable did do was to set up a powerful magnetic field that acted as a brake on the shell.

Another cable and another lashed out. Rioz sent them out

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in an almost heedless expenditure of energy.

"I'll get this one! By Mars, I'll get this one!"

With some two dozen cables stretching between ship and shell, he desisted. The shell's rotational energy, converted by braking into heat, had raised its temperature to a point where its radiation could be picked up by the ship's meters.

Long said, "Do you want me to put our brand on?"

"Suits me. But you don't have to, if you don't want to. It's my watch."

"I don't mind."

Long clambered into his suit and went out the lock. It was the surest sign of his newness to the game that he could count the number of times he had been out in space in a suit. This was the fifth time.

He went out along the nearest cable, hand over hand, feeling the vibration of the mesh against the metal of his mitten.

He burned their serial number in the smooth metal of the shell. There was nothing to oxidize the steel in the emptiness of space. It simply melted and vaporized, condensing some feet away from the energy beam, turning the surface it touched into a gray, powdery dullness.

Long swung back toward the ship.

Inside again, he took off his helmet, white and thick with frost that collected as soon as he had entered.

The first thing he heard was Swenson's voice coming over the radio in thick, almost unrecognizable rage: "—straight to the Commissioner. Damn it, there are rules to this game!"

Rioz sat back, unbothered. "Look, it hit my sector. I was late spotting it and I chased it into yours. You couldn't have gotten it with Mars for a backstop. That's all there is to it—You back, Long?"

He cut contact.

The signal button raged at him, but he paid no attention.

"He's going to the Commissioner?" Long asked.

"Not a chance. He just goes on like that because it breaks the monotony. He doesn't mean anything by it. He knows it's our shell. And how do you like that hunk of stuff, Ted?"

"Pretty good."

"Pretty good? It's terrific! Hold on. I'm setting it swinging."

The side jets spat steam and the ship started a slow rotation about the shell. The shell followed it. In thirty minutes, they were a gigantic bolo spinning in emptiness. Long checked the *Ephemeris* for the position of Deimos.

At a precisely calculated mo-

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ment, the cables released their magnetic field and the shell went streaking off tangentially in a trajectory that would, in a day or so, bring it within pronging distance of the shell-stores on the Martian satellite.

Rioz watched it go. He felt good. He turned to Long. "This is one fine day for us."

"What about Hilder's speech?" asked Long.

"What? Who? Oh, that. Listen, if I had to worry about everything some damned Grounder said, I'd never get any sleep. Forget it."

"I don't think we should forget it."

"You're nuts. Don't bother me about it, will you? Get some sleep instead."

IV

TED LONG found the breadth and height of the city's main thoroughfare exhilarating. It had been two months since the Commissioner had declared a moratorium on scavenging and had pulled all ships out of space, but this feeling of a stretched-out vista had not stopped thrilling Long. Even the thought that the moratorium was called pending a decision on the part of Earth to enforce its new insistence on water economy, by deciding upon a ration limit for scavenging, did not cast him entirely down.

The roof of the avenue was painted a luminous light blue, perhaps as an old-fashioned imitation of Earth's sky. Ted wasn't sure. The walls were lit with the store windows that pierced it.

Off in the distance, over the hum of traffic and the sluffing noise of people's feet passing him, he could hear the intermittent blasting as new channels were being bored into Mars' crust. All his life he remembered such blastings. The ground he walked on had been part of solid unbroken rock when he was born. The city was growing and would keep on growing—if Earth would only let it.

He turned off at a cross-street, narrower, not quite as brilliantly lit, shop windows giving way to apartment houses, each with its row of lights along the front facade. Shoppers and traffic gave way to slower-paced individuals and to squawling youngsters who had as yet evaded the maternal summons to the evening meal.

At the last minute, Long remembered the social amenities and stopped off at a corner water store.

He passed over his canteen. "Fill 'er up."

The plump storekeeper unscrewed the cap, cocked an eye into the opening. He shook it a little and let it gurgle. "Not much

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left," he said cheerfully.

"No," agreed Long.

The storekeeper trickled water in, holding the neck of the canteen close to the hose tip to avoid spillage. The volume gauge whirred. He screwed the cap back on.

Long passed over the coins and took his canteen. It clanked against his hip now with a pleasing heaviness. It would never do to a visit a family without a full canteen. Among the boys, it didn't matter. Not as much, anyway.

He entered the hallway of number 27, climbed a short flight of stairs, and paused with his thumb on the signal.

The sound of voices could be heard quite plainly.

One was a woman's voice, somewhat shrill. "It's all right for you to have your Scavenger friends here, isn't it? I'm supposed to be thankful you manage to get home two months a year. Oh, it's quite enough that you spend a day or two with me. After that, it's the Scavengers again."

"I've been home for a long time now," said a male voice, "and this is business. For Mars' sake, let up, Dora. They'll be here soon."

Long decided to wait a moment before signaling. It might give them a chance to hit a more neutral topic.

"What do I care if they come?" retorted Dora. "Let them hear me. And I'd just as soon the Commissioner kept the moratorium on permanently. You hear me?"

"And what would we live on?" came the male voice, hotly. "You tell me that."

"I'll tell you. You can make a decent, honorable living right here on Mars, just like everybody else. I'm the only one in this apartment house that's a Scavenger widow. That's what I am—a widow. I'm worse than a widow, because if I were a widow, I'd at least have a chance to marry someone else—What did you say?"

"Nothing. Nothing at all."

"Oh, I know what you said. Now listen here, Dick Swenson—"

"I only said," cried Swenson, "that now I know why Scavengers usually don't marry."

"You shouldn't have, either. I'm tired of having every person in the neighborhood pity me and smirk and ask when you're coming home. Other people can be mining engineers and administrators and even tunnel-borers. At least tunnel-borers' wives have a decent home-life and their children don't grow up like vagabonds. Peter might as well not have a father—"

A thin boy-soprano voice made its way through the door. It was

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somewhat more distant, as though it were in another room. "Hey, Mom, what's a vagabond?"

Dora's voice rose a notch. "Peter! You keep your mind on your homework."

Swenson said, in a low voice, "It's not right to talk this way in front of the kid. What kind of notions will he get about me?"

"Stay home then and teach him better notions."

Peter's voice called out again. "Hey, Mom, I'm going to be a Scavenger when I grow up."

Footsteps sounded rapidly. There was a momentary hiatus in the sounds, then a piercing, "Mom! Hey, Mom! Leggo my ear! What did I do?" and a snuffling silence.

Long seized the chance. He worked the signal vigorously.

SWENSON opened the door, brushing down his hair with both hands.

"Hello, Ted," he said, in a subdued voice. Then loudly, "Ted's here, Dora. Where's Mario, Ted?"

Long said, "He'll be here in a while."

Dora came bustling out of the next room, a small, dark woman with a pinched nose, and hair, just beginning to show touches of gray, combed off the forehead.

"Hello, Ted. Have you eaten?"

"Quite well, thanks. I haven't interrupted you, have I?"

"Not at all. We finished ages ago. Would you like some coffee?"

"I think so." Ted unslung his canteen and offered it.

"Oh, goodness, that's all right. We've plenty of water."

"I insist."

"Well, then—"

Back into the kitchen she went. Through the swinging door, Long caught a glimpse of dishes sitting in Secoterg, the "waterless cleaner that soaks up and absorbs grease and dirt in a twinkling. One ounce of water will rinse eight square feet of dish surface clean as clean. Buy Secoterg. Secoterg just cleans it right, makes your dishes shiny bright, does away with water waste—"

The tune started whining through his mind and Long crushed it with speech. He said, "How's Pete?"

"Fine, fine. The kid's in the fourth grade now. You know, I don't get to see him much. Well, sir, when I came back last time, he looked at me and said—"

It went on for a while and wasn't too bad as bright-sayings-of-bright-children-as-told-by-dull-parents go.

The door signal burped and Mario Rioz came in, frowning and red.

Swenson stepped to him quickly. "Listen, don't say anything

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about shell-snaring. Dora still remembers the time you fingered a Class A shell out of my territory and she's in one of her moods now."

"Who the hell wants to talk about shells?" Rioz slung off a fur-lined jacket, threw it over the back of the chair, and sat down.

Dora came through the swinging door, viewed the newcomer with a synthetic smile and said, "Hello, Mario. Coffee for you, too?"

"Yeah," he said, reaching automatically for his canteen.

"Just use some more of my water, Dora," said Long, quickly. "He'll owe it to me."

"Yeah," said Rioz.

"What's wrong, Mario?" asked Long.

Rioz said, heavily, "Go on. Say you told me so. A year ago, when Hilder made that speech, you told me so. Say it."

Long shrugged.

Rioz said, "They've set up the quota. Fifteen minutes ago, the news came out."

"Well?"

"Fifty thousand tons of water per trip."

"What?" yelled Swenson, burning. "You can't get off Mars with fifty thousand!"

"That's the figure. It's a deliberate piece of gutting. No more scavenging."

DORA came out with the coffee and set it down all around.

"What's all this about no more scavenging?" She sat down very firmly and Swenson looked helpless.

"It seems," said Long, "that they're rationing us at fifty thousand tons and that means we can't make any more trips."

"Well, what of it?" Dora sipped her coffee and smiled gaily. "If you want my opinion, it's a good thing. It's time all you Scavengers found yourselves a nice, steady job here on Mars. I mean it. It's no life to be running all over space—"

"Please, Dora," said Swenson.

Rioz came close to a snort.

Dora raised her eyebrows. "I'm just giving my opinions."

Long said, "Please feel free to do so. But I would like to say something. Fifty thousand is just a detail. We know that Earth—or at least Hilder's party—wants to make political capital out of a campaign for water economy, so we're in a bad hole. We've got to get water somehow, or they'll shut us down altogether, right?"

"Well, sure," said Swenson.

"But the question is how, right?"

"If it's only getting water," said Rioz, in a sudden gush of words, "there's only one thing to do and you know it. If the Grounders won't give us water,

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we'll take it. The water doesn't belong to them just because their fathers and grandfathers were too damned sick-yellow ever to leave their fat planet. Water belongs to people wherever they are. We're people and the water's ours, too. We have a right to it."

"How do you propose taking it?" asked Long.

"Easy! They've got oceans of water on Earth. They can't post a guard over every square mile. We can sink down on the night side of the planet any time we want, fill our shells, then get away. How can they stop us?"

"In half a dozen ways, Mario. How do you spot shells in space up to distances of a hundred thousand miles? One thin metal shell in all that space. How? By radar. Do you think there's no radar on Earth? Do you think that if Earth ever gets the notion we're engaged in waterlegging, it won't be simple for them to set up a radar network to spot ships coming in from space?"

Dora broke in, indignantly. "I'll tell you one thing, Mario Rioz. My husband isn't going to be part of any raid to get water to keep up his scavenging with."

"It isn't just scavenging," said Mario. "Next they'll be cutting down on everything else. We've got to stop them now."

"But we don't need their water, anyway," said Dora. "We're not the Moon or Venus. We pipe enough water down from the polar caps for all we need. We have a water tap right in this apartment. There's one in every apartment on this block."

Long said, "Home use is the smallest part of it. The mines use water. And what do we do about the hydroponic tanks?"

"That's right," said Swenson. "What about the hydroponic tanks, Dora? They've got to have water and it's about time we arranged to grow our own fresh food instead of having to live on the condensed crud they ship us from Earth."

"Listen to him," said Dora, scornfully. "What do you know about fresh food? You've never eaten any."

"I've eaten more than you think. Do you remember those carrots I picked up once?"

"Well, what was so wonderful about them? If you ask me, good baked protomeal is much better. And healthier, too. It just seems to be the fashion now to be talking fresh vegetables, because they're increasing taxes for these hydroponics. Besides, all this will blow over."

LONG said, "I don't think so. Not by itself, anyway. Hilder will probably be the next Coordinator and then things may really get bad. If they cut down

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on food shipments, too—"

"Well, then," shouted Rioz, "what do we do? I still say take it! Take the water!"

"And I say we can't do that, Mario. Don't you see that what you're suggesting is the Earth way, the Grounder way? You're trying to hold on to the umbilical cord that ties Mars to Earth. Can't you get away from that? Can't you see the Martian way?"

"No, I can't. Suppose you tell me."

"I will, if you'll listen. When we think about the Solar System, what do we think about? Mercury, Venus, Earth, Moon, Mars, Phobos, and Deimos. There you are—seven bodies, that's all. But that doesn't represent one per cent of the Solar System. We Martians are right at the edge of the other ninety-nine per cent. Out there, farther from the Sun, there's unbelievable amounts of water!"

The others stared.

Swenson said, uncertainly, "You mean the layers of ice on Jupiter and Saturn?"

"Not that specifically, but it *is* water, you'll admit. A thousand-mile-thick layer of water is a lot of water."

"But it's all covered up with layers of ammonia or—or something, isn't it?" asked Swenson. "Besides, we can't land on the major planets."

"I know that," said Long, "but I haven't said that was the answer. The major planets aren't the only objects out there. What about the asteroids and the satellites? Vesta is a two-hundred-mile-diameter asteroid that's hardly more than a chunk of ice. One of the moons of Saturn is mostly ice. How about that?"

Rioz said, "Haven't you ever been in space, Ted?"

"You know I have. Why do you ask?"

"Sure, I know you have, but you still talk like a Grounder. Have you thought of the distances involved? The average asteroid is a hundred twenty million miles from Mars at the closest. That's twice the Venus-Mars hop and you know that hardly any liners do even that in one jump. They usually stop off at Earth or the Moon. After all, how long do you expect anyone to stay in space, man?"

"I don't know. What's your limit?"

"You know the limit. You don't have to ask me. It's six months. That's handbook data. After six months, if you're still in space, you're psychotherapy meat. Right, Dick?"

Swenson nodded.

"And that's just the asteroids," Rioz went on. "From Mars to Jupiter is three hundred thirty million miles; and to Saturn it's

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seven hundred million. How can anyone handle that kind of distance? Suppose you hit standard velocity or to make it even, say you get up to a good two hundred kilomiles an hour. It would take you—let's see, allowing time for acceleration and deceleration—about six or seven months to get to Jupiter and nearly a year to get to Saturn. Of course, you could hike the speed to a million miles an hour, theoretically, but where would you get the water to do that?"

"Gee," said a small voice, attached to a smutty nose and round eyes, "Saturn!"

Dora whirled in her chair. "Peter, march right back into your room!"

"Aw, Ma."

"Don't 'aw, Ma' me." She began to get out of the chair, and Peter scuttled away.

Swenson said, "Say, Dora, why don't you keep him company for a while? It's hard to keep his mind on homework if we're all out here talking."

Dora sniffed obstinately and stayed put. "I'll sit right here until I find out what Ted Long is thinking of. I tell you right now I don't like the sound of it."

SWENSON said, nervously, "Well, never mind Jupiter and Saturn. I'm sure Ted isn't figuring on that. But what about Vesta? We could make it in ten or twelve weeks there and the same back. And two hundred miles in diameter. That's four million cubic miles of ice!"

"So what?" said Rioz. "What do we do on Vesta? Quarry the ice? Set up mining machinery? Say, do you know how long that would take?"

Long said, "I'm talking about Saturn, not Vesta."

Rioz addressed an unseen audience. "I tell him seven hundred million miles and he keeps on talking."

"All right," said Long, "suppose you tell me how you know we can only stay in space six months, Mario?"

"It's common knowledge, damn it."

"Because it's in the *Handbook of Space Flight*. It's data compiled by Earth scientists from experience with Earth pilots and spacemen. You're still thinking Grounder style. You won't think the Martian way."

"A Martian may be a Martian, but he's still a man."

"But how can you be so blind? How many times have you fellows been out for over six months without a break?"

Rioz said, "That's different."

"Because you're Martians? Because you're professional Scavengers?"

"No. Because we're not on a

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flight. We can put back for Mars any time we want to."

"But you *don't* want to. That's my point. Earthmen have tremendous ships with libraries of films, with a crew of fifteen plus passengers. Still, they can only stay out six months maximum. Martian Scavengers have a two room ship with only one partner. But we can stick it out more than six months."

DORA said, "I suppose you want to stay in a ship for a year and go to Saturn."

"Why not, Dora?" said Long. "We can do it. Don't you see we can? Earthmen can't. They've got a real world. They've got open sky and fresh food, all the air and water they want. Getting into a ship is a terrible change for them. More than six months is too much for them for that very reason. Martians are different. We've been living on a ship our entire lives.

"That's all Mars is—a ship. It's just a big ship forty-five hundred miles across with one tiny room in it occupied by fifty thousand people. It's closed in like a ship. We breathe packaged air and drink packaged water which we repurify over and over. We eat the same food-rations we eat aboard ship. When we get into a ship, it's the same thing we've known all our lives. We can stand it for a lot more than a year if we have to."

Dora said, "Dick, too?"

"We all can."

"Well, Dick can't. It's all very well for you, Ted Long, and this shell-stealer here, this Mario, to talk about jaunting off for a year. You're not married. Dick is. He has a wife and he has a child and that's enough for him. He can just get a regular job right here on Mars. Why, my goodness, suppose you go to Saturn and find there's no water there. How'll you get back? Even if you had water left, you'd be out of food. It's the most ridiculous thing I ever heard of."

"No. Now listen," said Long, tightly. "I've thought this thing out. I've talked to Commissioner Sankov and he'll help. But we've got to have ships and men. I can't get them. The men won't listen to me. I'm green. You two are known and respected. You're veterans. If you back me, even if you don't go yourselves, if you'll just help me sell this thing to the rest, get volunteers—"

"First," said Rioz, grumpily, "you'll have to do a lot more explaining. Once we get to Saturn, where's the water?"

"That's the beauty of it," said Long. "That's why it's got to be Saturn. The water there is just floating around in space for the taking."

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V

WHEN Hamish Sankov had come to Mars, there was no such thing as a native Martian. Now there were two-hundred-odd babies whose grandfathers had been born on Mars—natives in the third generation.

When he had come as a boy in his teens, Mars had been scarcely more than a huddle of grounded spaceships connected by sealed underground tunnels. Through the years, he had seen buildings grow and burrow widely, thrusting blunt snouts up into the thin, unbreathable atmosphere. He had seen huge storage depots spring up into which spaceships and their loads could be swallowed whole. He had seen the mines grow from nothing to a huge gouge in the Martian crust, while the population of Mars grew from fifty to fifty thousand.

It made him feel old, these long memories—they and the even dimmer memories induced by the presence of this Earthman before him. His visitor brought up those long-forgotten scraps of thought about a soft-warm world that was as kind and gentle to mankind as the mother's womb.

The Earthman seemed fresh from that womb. Not very tall, not very lean; in fact, distinctly plump. Dark hair with a neat little wave in it, a neat little mustache and neatly scrubbed skin. His clothing was right in style and as fresh and neatly turned as plastek could be.

Sankov's own clothes were of Martian manufacture, serviceable and clean, but many years behind the times. His face was craggy and lined, his hair was pure white and his Adam's apple wobbled when he talked.

The Earthman was Myron Digby, member of Earth's General Assembly. Sankov was Martian Commissioner.

Sankov said, "This all hits us hard, Assemblyman."

"It's hit most of us hard, too, Commissioner."

"Uh-huh. Can't honestly say then that I can make it out. Of course, you understand, I don't make out that I can understand Earth ways, for all that I was born there. Mars is a hard place to live, Assemblyman, and you have to understand that. It takes a lot of shipping space just to bring us food, water, and raw materials so we can live. There's not much room left for books and news-films. Even video programs can't reach Mars, except for about a month when Earth is in conjunction, and even then nobody has much time to listen.

"My office gets a weekly summary film from Planetary Press. Generally, I don't have time to pay attention to it. Maybe you'd

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call us provincial, and you'd be right. When something like this happens, all we can do is kind of helplessly look at each other."

Digby said, slowly, "You can't mean that your people on Mars haven't heard of Hilder's anti-Waster campaign."

"No, can't exactly say that. There's a young Scavenger, son of a good friend of mine who died in space—" Sankov scratched the side of his neck doubtfully—"who makes a hobby out of reading up on Earth history and things like that. He catches video broadcasts when he's out in space and he listened to this man Hilder. Near as I can make out, that was the first talk Hilder made about Wasters.

"The young fellow came to me with that. Naturally, I didn't take him very serious. I kept an eye on the Planetary Press films for a while after that, but there wasn't much mention of Hilder and what there was made him out to look pretty funny."

"Yes, Commissioner," said Digby, "it all seemed quite a joke when it started."

SANKOV stretched out a pair of long legs to one side of his desk and crossed them at the ankles. "Seems to me it's still pretty much of a joke. What's his argument? We're using up water. Has he tried looking at some figures? I got them all here. Had them brought to me when this committee arrived.

"Seems that Earth has four hundred million cubic miles of water in its oceans and each cubic mile weighs four and a half billion tons. That's a lot of water. Now we use some of that heap in space flight. Most of the thrust is inside Earth's gravitational field, and that means the water thrown out finds its way back to the oceans. Hilder doesn't figure that in. When he says a million tons of water is used up per flight, he's a liar. It's less than a hundred thousand tons.

"Suppose, now, we have fifty thousand flights a year. We don't, of course; not even fifteen hundred. But let's say there are fifty thousand. I figure there's going to be considerable expansion as time goes on. With fifty thousand flights, one cubic mile of water would be lost to space each year. That means that in a million years Earth would lose *one-quarter of one per cent* of its total water supply!"

Digby spread his hands, palms upward, and let them drop. "Commissioner, Interplanetary Alloys has used figures like that in their campaign against Hilder, but you can't fight a tremendous, emotion-filled drive with cold mathematics. This man Hilder has invented a name, 'Wasters.'

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Slowly, he has built this name up into a gigantic conspiracy; a gang of brutal profit-seeking wretches raping Earth for their own immediate benefit.

"He has accused the government of being riddled with them, the Assembly of being dominated by them, the press of being owned by them. None of this, unfortunately, seems ridiculous to the average man. He knows all too well what selfish men can do to Earth's resources. He knows what happened to Earth's oil during the Time of Troubles, for instance, and the way topsoil was ruined.

"When a farmer experiences a drought, he doesn't care that the amount of water lost in space flight isn't a droplet in a fog as far as Earth's overall water supply is concerned. Hilder has given him something to blame and that's the strongest possible consolation for disaster. He isn't going to give that up for a diet of figures."

Sankov said, "That's where I get puzzled. Maybe it's because I don't know how things work on Earth, but it seems to me that there aren't just droughty farmers there. As near as I could make out from the news summaries, these Hilder people are a minority. Why is it Earth goes along with a few farmers and some crackpots that egg them on?"

"Because, Commissioner, there are such things as worried human beings. The steel industry sees that an era of space flight will stress increasingly the light nonferrous alloys. The various miners' unions worry about extraterrestrial competition. Any Earthman who can't get aluminum to build a pre-fab is certain that it is because the aluminum is going to Mars. I know a professor of archaeology who's an anti-Waster because he can't get a government grant to cover his excavations. He's convinced that all government money is going into rocketry research and space medicine and he resents it."

Sankov said, "That doesn't sound like Earth people are much different from us here on Mars. But what about the General Assembly? Why do they have to go along with Hilder?"

DIGBY smiled sourly. "Politics isn't pleasant to explain. Hilder introduced this bill to set up a committee to investigate waste in space flight. Maybe three-fourths or more of the General Assembly was against such an investigation as an intolerable and useless extension of bureaucracy —which it is. But then how could any legislator be against a mere investigation of waste? It would sound as though he had something to fear or to conceal. It

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would sound as though he were himself profiting from waste. Hilder is not in the least afraid of making such accusations, and whether true or not, they would be a powerful factor with the voters in the next election. The bill passed.

"And then there came the question of appointing the members of the committee. Those who were against Hilder shied away from membership, which would have meant decisions that would be continually embarrassing. Remaining on the sidelines would make that one that much less a target for Hilder. The result is that I am the only member of the committee who is outspokenly anti-Hilder and it may cost me re-election."

Sankov said, "I'd be sorry to see that, Assemblyman. It looks as though Mars didn't have as many friends as we thought we had. We wouldn't like to lose one. But if Hilder wins out, what's he after, anyway?"

"I should think," said Digby, "that that is obvious. He wants to be the next Global Coordinator."

"Think he'll make it?"

"If nothing happens to stop him, he will."

"And then what? Will he drop this Waster campaign then?"

"I can't say. I don't know if he's laid his plans past the Coordinacy. Still, if you want my guess, he couldn't abandon the campaign and maintain his popularity. It's gotten out of hand."

Sankov scratched the side of his neck. "All right. In that case, I'll ask you for some advice. What can we folks on Mars do? You know Earth. You know the situation. We don't. Tell us what to do."

Digby rose and stepped to the window. He looked out upon the low domes of other buildings; red, rocky, completely desolate plain in between; a purple sky and a shrunken sun.

He said, without turning, "Do you people really like it on Mars?"

Sankov smiled. "Most of us don't exactly know any other world, Assemblyman. Seems to me Earth would be something queer and uncomfortable to them."

"But wouldn't Martians get used to it? Earth isn't hard to take after this. Wouldn't your people learn to enjoy the privilege of breathing air under an open sky? You once lived on Earth. You remember what it was like."

"I sort of remember. Still, it doesn't seem to be easy to explain. Earth is just there. It fits people and people fit it. People take Earth the way they find it. Mars is different. It's sort of raw and doesn't fit people. People got to

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make something out of it. They got to *build* a world, and not take what they find. Mars isn't much yet, but we're building and when we're finished, we're going to have just what we like. It's sort of a great feeling to know you're building a world. Earth would be kind of unexciting after that."

THE Assemblyman said, "Surely the ordinary Martian isn't such a philosopher that he's content to live this terribly hard life for the sake of a future that must be hundreds of generations away."

"No-o, not just like that." Sankov put his right ankle on his left knee and cradled it as he spoke. "Like I said, Martians are a lot like Earthmen, which means they're sort of human beings, and human beings don't go in for philosophy much. Just the same, there's something *to* living in a growing world, whether you think about it much or not.

"My father used to send me letters when I first came to Mars. He was an accountant and he just sort of stayed an accountant. Earth wasn't much different when he died from what it was when he was born. He didn't see anything happen. Every day was like every other day, and living was just a way of passing time until he died.

"On Mars, it's different. Every day there's something new—the city's bigger, the ventilation system gets another kick, the water lines from the poles get slicked up. Right now, we're planning to set up a news-film association of our own. We're going to call it Mars Press. If you haven't lived when things are growing all about you, you'll never understand how wonderful it feels.

"No, Assemblyman, Mars is hard and tough and Earth is a lot more comfortable, but seems to me, if you take our boys to Earth, they'll be unhappy. They probably wouldn't be able to figure out why, most of them, but they'd feel lost; lost and useless. Seems to me lots of them would never make the adjustment."

Digby turned away from the window and the smooth, pink skin of his forehead was creased into a frown. "In that case, Commissioner, I am sorry for you. For all of you."

"Why?"

"Because I don't think there's anything your people on Mars can do. Or the people on the Moon or Venus. It won't happen now; maybe it won't happen for a year or two, or even for five years. But pretty soon you'll all have to come back to Earth, unless—"

Sankov's white eyebrows bent low over his eyes. "Well?"

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"Unless you can find another source of water besides the planet Earth."

Sankov shook his head. "Don't seem likely, does it?"

"Not very."

"And except for that, seems to you there's no chance?"

"None at all.'"

Digby said that and left, and Sankov stared for a long time at nothing before he punched a combination of the local communi-line.

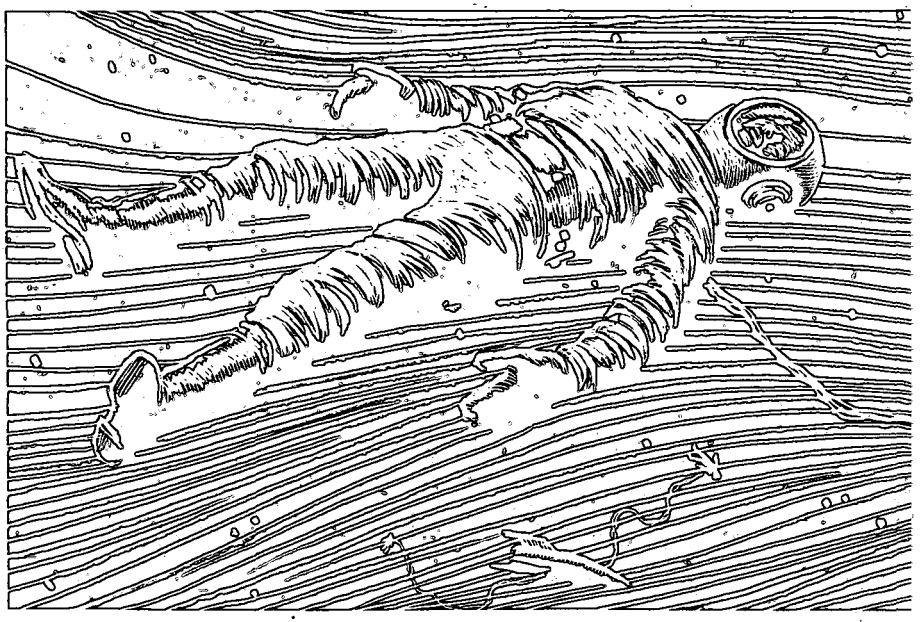
After a while, Ted Long looked out at him.

Sankov said, "You were right, son. There's nothing they can do. Even the ones that mean well see no way out. How did you know?"

"Commissioner," said Long, "when you've read all you can about the Time of Troubles, particularly about the twentieth century, nothing political can come as a real surprise."

"Well, maybe. Anyway, son, Assemblyman Digby is sorry for us, quite a piece sorry, you might say, but that's all. He says we'll have to leave Mars—or else get water somewhere else. Only he thinks that we can't get water somewhere else."

"You know we can, don't you, Commissioner?"



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"I know we *might*, son. It's a terrible risk."

"If I find enough volunteers, the risk is our business."

"How is it going?"

"Not bad. Some of the boys are on my side right now. I talked Mario Rioz into it, for instance, and you know he's one of the best."

"That's just it—the volunteers will be the best men we have. I hate to allow it."

"If we get back, it will be worth it."

"If! It's a big word, son."

"And a big thing we're trying to do."

"Well, I gave my word that if there was no help on Earth, I'll see that the Phobos water-hole lets you have all the water you'll need. Good luck."

VI

HALF a million miles above Saturn, Mario Rioz was cradled on nothing and sleep was delicious. He came out of it slowly and for a while, alone in his suit, he counted the stars and traced lines from one to another.

At first, as the weeks flew past, it was scavenging all over again, except for the gnawing feeling

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that every minute meant an additional number of thousands of miles away from all humanity. That made it worse.

They had aimed high to pass out of the ecliptic while moving through the Asteroid Belt. That had used up water and had probably been unnecessary. Although tens of thousands of worldlets look as thick as vermin in two-dimensional projection upon a photographic plate, they are nevertheless scattered so thinly through the quadrillions of cubic-miles that make up their conglomerate orbit that only the most ridiculous of coincidences would have brought about a collision.

Still, they passed over the Belt and someone calculated the chances of collision with a fragment of matter large enough to do damage. The value was so low, so impossibly low, that it was perhaps inevitable that the notion of the "space-float" should occur to someone.

The days were long and many, space was empty, only one man was needed at the controls at any one time. The thought was a natural.

First, it was a particularly daring one who ventured out for fifteen minutes or so. Then another who tried half an hour. Eventually, before the asteroids were entirely behind, each ship regularly had its off-watch member suspended in space at the end of a cable.

It was easy enough. The cable, one of those intended for operations at the conclusion of their journey, was magnetically attached at both ends, one to the spacesuit to start with. Then you clambered out the lock onto the ship's hull and attached the other end there. You paused a while, clinging to the metal skin by the electro-magnets in your boots. Then you neutralized those and made the slightest muscular effort.

Slowly, ever so slowly, you lifted from the ship and even more slowly the ship's larger mass moved an equivalently shorter distance downward. You floated incredibly, weightlessly, in solid, speckled black. When the ship had moved far enough away from you, your gauntleted hand, which kept touch upon the cable, tightened its grip slightly. Too tightly, and you would begin moving back toward the ship and it toward you. Just tightly enough, and friction would halt you. Because your motion was equivalent to that of the ship, it seemed as motionless below you as though it had been painted against an impossible background while the cable between you hung in coils that had no reason to straighten out.

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It was a ship to your eye. One half was lit by the light of the feeble Sun, which was still too bright to look at directly without the heavy protection of the polarized spacesuit visor. The other half was black on black, invisible.

Space closed in and it was like sleep. Your suit was warm, it renewed its air automatically, it had food and drink in special containers from which it could be sucked with a minimal motion of the head, it took care of wastes appropriately. Most of all, more than anything else, there was the delightful euphoria of weightlessness.

You never felt so well in your life. The days stopped being too long, they weren't long enough, and there weren't enough of them.

THEY had passed Jupiter's orbit at a spot some thirty degrees from its then position. For months it was the brightest object in the sky, always excepting the glowing white pea that was the Sun. At its brightest, some of the Scavengers insisted they could make out Jupiter as a tiny sphere, one side squashed out of true by the night-shadow.

Then over a period of additional months it faded, while another dot of light grew until it was brighter than Jupiter. It was Saturn, first as a dot of brilliance, then as an oval, glowing splotch.

("Why oval?" someone asked and after a while someone else said, "The rings, of course," and it was obvious.)

Everyone space-floated at all possible times toward the end, watching Saturn incessantly.

("Hey, you jerk, come on back in, damn it. You're on duty." "Who's on duty? I've got fifteen minutes more by my watch." "You set your watch back. Besides, I gave you twenty minutes yesterday." "You wouldn't give two minutes to your grandmother." "Come on in, damn it, or I'm coming out anyway." "All right, I'm coming. Holy howlers, what a racket over a lousy minute." But no quarrel could possibly be serious; not in space. It felt too good.)

Saturn grew until at last it rivaled and then surpassed the Sun. The rings, set at a broad angle to their trajectory of approach, swept grandly about the planet, only a small portion being eclipsed. Then, as they approached, the span of the rings grew still wider, yet narrower as the angle of approach constantly decreased.

The larger moons showed up in the surrounding sky like serene fireflies.

Mario Rioz was glad he was awake so that he could watch again.

Saturn filled half the sky,

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streaked with orange, the night shadow cutting it fuzzily nearly one-quarter of the way in from the right. Two round little dots in the brightness were shadows of two of the moons. To the left and behind him (he could look over his left shoulder to see, and as he did so, the rest of his body inched slightly to the right to conserve angular momentum) was the white diamond of the Sun.

Most of all he liked to watch the rings. At the left, they emerged from behind Saturn, a tight, bright triple band of orange light. At the right, their beginnings were hidden in the night shadow, but showed up closer and broader. They widened as they came, like the flare of a horn, growing hazier as they approached, until, while the eye followed them, they seemed to fill the sky and lose themselves.

From the position of the Scavenger fleet just inside the outer rim of the outermost ring, the rings broke up and assumed their true identity as a phenomenal cluster of solid fragments rather than the tight, solid band of light they seemed.

Below him, or rather in the direction his feet pointed, some twenty miles away, was one of the ring fragments. It looked like a large irregular splotch, marring the symmetry of space, three-quarters in brightness and the night shadow cutting it like a knife. Other fragments were farther off, sparkling like star-dust, dimmer and thicker, until, as you followed them down, they became rings once more.

The fragments were motionless, but that was only because the ships had taken up an orbit about Saturn equivalent to that of the outer edge of the rings.

THE day before, Rioz reflected, he had been on that nearest fragment, working along with more than a score of others to mold it into the desired shape. Tomorrow, he would be at it again.

Today—today he was space-floating.

"Mario?" The voice that broke upon his ear-phones was questioning.

Momentarily, Rioz was flooded with annoyance. Damn it, he wasn't in the mood for company.

"Speaking," he said.

"I thought I had your ship spotted. How are you?"

"Fine. That you, Ted?"

"That's right," said Long.

"Anything wrong on the fragment?"

"Nothing. I'm out here floating."

"You?"

"It gets me, too, occasionally. Beautiful, isn't it?"

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"Nice," agreed Rioz.

"You know, I've read Earth books—"

"Grounder books, you mean." Rioz yawned and found it difficult under the circumstances to use the expression with the proper amount of resentment.

"—and sometimes I read descriptions of people lying on grass," continued Long. "You know, that green stuff like thin long pieces of paper they have all over the ground down there, and they look up at the blue sky with clouds in it. Did you ever see any films of that?"

"Sure. It didn't attract me. It looked cold."

"I suppose it isn't, though. After all, Earth is quite close to the Sun and they say their atmosphere is thick enough to hold the heat. I must admit that personally I would hate to be caught under open sky with nothing on but clothes. Still, I imagine they like it."

"Grounders are nuts!"

"They talk about the trees, big brown stalks, and the winds, air movements, you know."

"You mean drafts. They can keep that, too."

"It doesn't matter. The point is they describe it beautifully, almost passionately. Many times I've wondered, 'What's it really like? Will I ever feel it or is this something only Earthmen can possibly feel?' I've felt so often that I was missing something vital. Now I know what it must be like. It's this. Complete peace in the middle of a beauty-drenched universe."

RIOZ said, "They wouldn't like it. The Grounders, I mean. They're so used to their own lousy little world, they wouldn't appreciate what it's like to float and look down on Saturn." He flipped his body slightly and began swaying back and forth about his center of mass, slowly, soothingly.

Long said, "Yes, I think so, too. They're slaves to their planet. Even if they come to Mars, it will only be their children that are free. There'll be starships someday; great, huge things that can carry thousands of people and maintain its self-contained equilibrium for decades, maybe centuries. Mankind will spread through the whole Galaxy. But people will have to live their lives out on shipboard until new methods of interstellar travel are developed, so it will be Martians, not planet-bound Earthmen, who will colonize the Universe. That's inevitable. It's got to be. It's the Martian way."

But Rioz made no answer. He had dropped off to sleep again, rocking and swaying gently, half a million miles above Saturn.

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VII

THE work-shift of the ring-fragment was the tail of the coin. The weightlessness, peace and privacy of the space-float gave place to something that had neither peace nor privacy. Even the weightlessness, which continued, became more a purgatory than a paradise under the new conditions.

Try to manipulate an ordinarily non-portable heat projector. It could be lifted, despite the fact that it was six feet high and wide and almost solid metal, since it only weighed a fraction of an ounce. But its inertia was exactly what it had always been, which meant that if it wasn't moved into position very slowly, it would just keep on going, taking you with it. Then you would have to hike the pseudo-grav field of your suit and come down with a jar.

Keralski had hiked the field a little too high and he came down a little too roughly, with the projector coming down with him at a dangerous angle. His crushed ankle had been the first casualty of the expedition.

Rioz was swearing fluently and nearly continuously. He continued to have the impulse to drag the back of his hand across his forehead in order to wipe away the accumulating sweat. The few times that he had succumbed to the impulse, metal had met silicone with a clash that rang loudly inside his suit, but served no useful purpose. The desiccators within the suit were sucking at maximum and, of course, recovering the water and restoring ion-exchanged liquid, containing a careful proportion of salt, into the appropriate receptacle.

Rioz yelled, "Damn it, Dick, wait till I give the word, will you?"

And Swenson's voice rang in his ears, "Well, how long am I supposed to sit here?"

"Till I say," replied Rioz.

He strengthened pseudo-grav and lifted the projector a bit. He released pseudo-grav, insuring that the projector would stay in place for minutes even if he withdrew support altogether. He kicked the cable out of the way (it stretched beyond the close "horizon" to a power source that was out of sight) and touched the release.

The material of which the fragment was composed bubbled and vanished under its touch. A section of the lip of the tremendous cavity he had already carved into its substance melted away and a roughness in its contour had disappeared.

"Try it now," called Rioz.

Swenson was in the ship that

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was hovering nearly over Rioz's head.

Swenson called, "All clear?"

"I told you to go ahead."

IT was a feeble flicker of steam that issued from one of the ship's forward vents. The ship drifted down toward the ring-fragment. Another flicker adjusted a tendency to drift sidewise. It came down straight.

A third flicker to the rear slowed it to a feather-rate.

Rioz watched tensely. "Keep her coming. You'll make it. You'll make it."

The rear of the ship entered the hole, nearly filling it. The bellying walls came closer and closer to its rim. There was a grinding vibration as the ship's motion halted.

It was Swenson's turn to curse. "It doesn't fit," he said.

Rioz threw the projector groundward in a passion and went flailing up into space. The projector kicked up a white crystalline dust all about it, and when Rioz came down under pseudo-grav, he did the same.

He said, "You went in on the bias, you dumb Grounder."

"I hit it level, you dirt-eating farmer."

Backward-pointing side jets of the ship were blasting more strongly than before, and Rioz hopped to get out of the way.

The ship scraped up from the pit, then shot into space half a mile before forward jets could bring it to a halt.

Swenson said tensely, "We'll spring half a dozen plates if we do this once again. Get it right, will you?"

"I'll get it right. Don't worry about it. Just you come in right."

Rioz jumped upward and allowed himself to climb three hundred yards to get an overall look at the cavity. The gouge-marks of the ship were plain enough. They were concentrated at one point, halfway down the pit. He would get that.

It began to melt outward under the blaze of the projector.

Half an hour later, the ship snuggled neatly into its cavity, and Swenson, wearing his space-suit, emerged to join Rioz.

Swenson said, "If you want to step in and climb out of the suit, I'll take care of the icing."

"It's all right," said Rioz. "I'd just as soon sit here and watch Saturn."

He sat down at the lip of the pit. There was a six-foot gap between it and the ship. In some places about the circle, it was two feet, in a few places even merely a matter of inches. You couldn't expect a better fit out of hand-work. The final adjustment would be made by steaming ice gently and letting it freeze into

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the cavity between the lip and the ship.

SATURN moved visibly across the sky, its vast bulk inching below the horizon.

Rioz said, "How many ships are left to put in place?"

Swenson said, "Last I heard, it was eleven. We're in now, so that means only ten. Seven of the ones that are placed are iced in. Two or three are dismantled."

"We're coming along fine."

"There's plenty to do yet. Don't forget the main jets at the other end. And the cables and the power lines. Sometimes I wonder if we'll make it. On the way out, it didn't bother me so much, but just now I was sitting at the controls and I was saying: 'We won't make it. We'll sit out here and starve and die with nothing but Saturn over us.' It makes me feel—"

He didn't explain how it made him feel. He just sat there.

Rioz said, "You think too damn much."

"It's different with you," said Swenson. "I keep thinking of Pete—and Dora."

"What for? She said you could go, didn't she? The Commissioner gave her that talk on patriotism and how you'd be a hero and set for life once you got back, and she said you could go. You didn't sneak out the way Adams did."

"Adams is different. That wife of his should have been shot when she was born. Some women can make hell for a guy, can't they? She didn't want him to go —But she'd probably rather he didn't come back if she can get his settlement pay."

"What's your kick, then? Dora wants you back, doesn't she?"

Swenson sighed. "I never treated her right."

"You turned over your pay, it seems to me. I wouldn't do that for any woman. Money for value received, not a cent more."

"Money isn't it. I get to thinking out here. A woman likes company. A kid needs his father. What am I doing way out here?"

"Getting set to go home."

"Ah-h, you don't understand."

VIII

TED LONG wandered over the ridged surface of the ring-fragment with his spirits as icy as the ground he walked on. It had all seemed perfectly logical back on Mars, but that was Mars. He had worked it out carefully in his mind in perfectly reasonable steps. He could still remember exactly how it went.

It didn't take a ton of water to move a ton of ship. It was not mass equals mass, but mass times velocity equals mass times velocity. It didn't matter, in other

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words, whether you shot out a ton of water at a mile a second or a hundred pounds of water at twenty miles a second. You got the same final velocity out of the ship.

That meant the jet nozzles had to be made narrower and the steam hotter. But then drawbacks appeared. The narrower the nozzle, the more energy was lost in friction and turbulence. The hotter the steam, the more refractory the nozzle had to be and the shorter its life. The limit in that direction was quickly reached.

Then, since a given weight of water could move considerably more than its own weight under the narrow-nozzle conditions, it paid to be big. The bigger the water-storage space, the larger the size of the actual travel-head, even in proportion. So they started to make liners heavier and bigger. But then the larger the shell, the heavier the bracings, the more difficult the weldings, the more exacting the engineering requirements. At the moment, the limit in that direction had been reached also.

And then he had put his finger on what had seemed to him to be the basic flaw—the original, unswervable conception that the fuel had to be placed *inside* the ship; that metal had to be built to encircle a million tons of water.

Why? Water did not have to be water. It could be ice, and ice could be shaped. Holes could be melted into it. Travel-heads and jets could be fitted into it. Cables could hold travel-heads and jets stiffly together under the influence of magnetic field-force grips.

Long felt the trembling of the ground he walked on. He was at the head of the fragment. A dozen ships were blasting in and out of sheaths carved in its substance, and the fragment shuddered under the continuing impact.

THE ice didn't have to be quarried. It existed in proper chunks in the rings of Saturn. That's all the rings were—pieces of nearly pure ice, circling Saturn. So spectroscopy stated and so it had turned out to be. He was standing on one such piece now, over two miles long, nearly one mile thick. It was almost half a billion tons of water, all in one piece, and he was standing on it.

But now he was face to face with the realities of life. He had never told the men just how quickly he had expected to set up the fragment as a ship, but in his heart, he had imagined it would be two days. It was a week now and he didn't dare to estimate the remaining time. He no longer even had any confidence that the task was a possible one. Would

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they be able to control jets with enough delicacy through leads slung across two miles of ice, to manipulate out of Saturn's dragging gravity?

Drinking water was low, though they could always distill more out of the ice. Still, the food stores were not in a good way, either.

HE paused, looked up into the sky, eyes straining. *Was* the object growing larger? He ought to measure its distance. Actually, he lacked the spirit to add that trouble to the others. His mind slid back to greater immediacies.

Morale, at least, was high. The men seemed to enjoy being out Saturn-way. They were the first humans to penetrate this far; the first to pass the asteroids, the first to see Jupiter like a glowing pebble to the naked eye, the first to see Saturn—like that.

He didn't think fifty practical, case-hardened, shell-snatching Scavengers would take time to feel that sort of emotion. But they did. And they were proud.

Two men and a half-buried ship slid up the moving horizon as he walked.

He called, crisply, "Hello, there!"

Rioz answered, "That you, Ted?"

"You bet. Is that Dick with you?"

"Sure. Come on, sit down. We were just getting ready to ice in and we were looking for an excuse to delay."

"I'm not," said Swenson, promptly. "When will we be leaving, Ted?"

"As soon as we get through. That's no answer, is it?"

Swenson said, dispiritedly, "I suppose there isn't any other answer."

Long looked up, staring at the irregular bright splotch in the sky.

Rioz followed his glance. "What's the matter?"

For a moment, Long did not reply. The sky was black otherwise and the ring fragments were an orange dust against it. Saturn was more than three-fourths below the horizon and the rings were going with it. Half a mile away, a ship bounded past the icy rim of the planetoid into the sky, was orange-lit by Saturn-light, and sank down again.

The ground trembled gently.

Rioz said, "Something bothering you about the shadow?"

They called it that. It was the nearest fragment of the rings, quite close considering that they were at the outer rim of the rings, where the pieces spread themselves relatively thin. It was perhaps twenty miles off, a jagged mountain, its shape clearly visible.

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"How does it look to you?" asked Long.

Rioz shrugged. "Okay, I guess. I don't see anything wrong."

"Doesn't it seem to be getting larger?"

"Why should it?"

"Well, doesn't it?" Long insisted.

RIOZ and Swenson stared at it thoughtfully.

"It does look bigger," said Swenson.

"You're just putting the notion into our minds," Rioz argued. "If it were getting bigger, it would be coming closer."

"What's impossible about that?"

"These things are unstable orbits."

"They were when we came here," said Long. "There, did you feel that?"

The ground had trembled again.

Long said, "We've been blasting this thing for a week now. First, twenty-five ships landed on it, which changed its momentum right there. Not much, of course. Then we've been melting parts of it away and our ships have been blasting in and out of it—all at one end, too. In a week, we may have changed its orbit just a bit. The two fragments, this one and the Shadow, might be converging."

"It's got plenty of room to miss us in." Rioz watched it thoughtfully. "Besides, if we can't even tell for sure that it's getting bigger, how quickly can it be moving? Relative to us, I mean."

"It doesn't have to be moving quickly. Its momentum is as large as ours, so that, however gently it hits, we'll be nudged completely out of our orbit, maybe in toward Saturn, where we don't want to go. As a matter of fact, ice has a very low tensile strength, so that both planetoids might break up into gravel."

Swenson rose to his feet. "Damn it, if I can tell how a shell is moving a thousand miles away, I can tell what a mountain is doing twenty miles away." He turned toward the ship.

Long didn't stop him.

Rioz said, "There's a nervous guy."

The neighboring planetoid rose to zenith, passed overhead, began sinking. Twenty minutes later, the horizon opposite that portion behind which Saturn had disappeared burst into orange flame as its bulk began lifting again.

Rioz called into his radio, "Hey, Dick, are you dead in there?"

"I'm checking," came the muffled response.

"Is it moving?" asked Long.

"Yes."

"Toward us?"

There was a pause. Swenson's

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voice was a sick one. "On the nose, Ted. Intersection of orbits will take place in three days."

"You're crazy!" yelled Rioz.

"I checked four times," said Swenson.

Long thought, blankly, "What do we do now?"

IX

SOME of the men were having trouble with the cables. They had to be laid precisely; their geometry had to be very nearly perfect for the magnetic field to attain maximum strength. In space, or even in air, it wouldn't have mattered. The cables would have lined up automatically once the juice went on.

Here it was different. A gouge had to be ploughed along the planetoid's surface and into it the cable had to be laid. If it were not lined up within a few minutes of arc of the calculated direction, a torque would be applied to the entire planetoid, with consequent loss of energy, none of which could be spared. The gouges then had to be redriven, the cables shifted and iced into the new positions.

The men plodded wearily through the routine.

And then the word reached them—

"All hands to the jets!"

Scavengers could not be said to be the type that took kindly to discipline. It was a grumbling, growling, muttering group that set about disassembling the jets of the ships that yet remained intact, carrying them to the tail end of the planetoid, grubbing them into position, and stringing the leads along the surface.

It was almost twenty-four hours before one of them looked into the sky and said, "Holy jeepers!" followed by something less printable.

His neighbor looked and said, "I'll be damned!"

Once they noticed, all did. It became the most astonishing fact in the Universe.

"Look at the Shadow!"

It was spreading across the sky like an infected wound. Men looked at it, found it had doubled its size, wondered why they hadn't noticed that sooner.

Work came to a virtual halt. They besieged Ted Long.

He said, "We can't leave. We don't have the fuel to see us back to Mars and we don't have the equipment to capture another planetoid. So we've got to stay. Now the Shadow is creeping in on us because our blasting has thrown us out of orbit. We've got to change that by continuing the blasting. Since we can't blast the front end any more without endangering the ship we're building, let's try another way."

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THEY went back to work on the jets with a furious energy that received impetus every half hour when the Shadow rose again over the horizon, bigger and more menacing than before.

Long had no assurance that it would work. Even if the jets would respond to the distant controls, even if the supply of water, which depended upon a storage chamber opening directly into the icy body of the planetoid, with built-in heat projectors steaming the propulsive fluid directly into the driving cells, were adequate—there was still no certainty that the body of the planetoid without a magnetic cable sheathing would hold together under the enormously disruptive stresses.

"Ready!" came the signal in Long's receiver.

Long called, "Ready!" and depressed the contact.

The vibration grew about him. The star field in the visiplate trembled.

In the rear-view there was a distant gleaming spume of swiftly moving ice crystals.

"It's blowing!" was the cry.

It kept on blowing. Long dared not stop. For six hours, it blew, hissing, bubbling, steaming into space; the body of the planetoid converted to vapor and hurled away.

The Shadow came closer until men did nothing but stare at the mountain in the sky, surpassing Saturn itself in spectacularity. Its every groove and valley was a plain scar upon its face. But when it passed through the planetoid's orbit, it crossed more than half a mile behind its then position.

The steam-jet ceased.

Long bent in his seat and covered his eyes. He hadn't eaten in two days. He could eat now, though. Not another planetoid was close enough to interrupt them, even if it began an approach that very moment.

Back on the planetoid's surface, Swenson said, "All the time I watched that damned rock coming down, I kept saying to myself, 'This can't happen. We can't let it happen.' "

"Hell," said Rioz, "we were all nervous. Did you see Jim Davis? He was green. I was a little jumpy myself."

"That's not it. It wasn't just—dying, you know. I was thinking—I know it's funny, but I can't help it—I was thinking that Dora warned me I'd get killed, and now if I get myself killed, she'll never let me hear the last of it. Isn't that a crummy sort of attitude at a time like that?"

"Listen," said Rioz, "you wanted to get married, so you got married. Why come to me with your troubles?"

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X

THE flotilla, welded into a single unit, was returning over its mighty course from Saturn to Mars. Each day it flashed over a length of space it had taken nine days outward.

Ted Long had put the entire crew on emergency. With twenty-five ships embedded in the planetoid taken out of Saturn's rings, and unable to move or maneuver independently, the coordination of their power sources into unified blasts was a ticklish problem. The jarrings that took place on the first day of travel nearly shook them out from under their hair.

That, at least, smoothed itself out as the velocity raced upward under the steady thrust from behind. They passed the one-hundred-thousand-mile-an-hour mark late on the second day, and climbed steadily toward the million-mile mark and beyond.

Long's ship, which formed the needle point of the frozen fleet, was the only one which possessed a five-way view of space. It was an uncomfortable position under the circumstances. Long found himself watching tensely, imagining somehow that the stars would slowly begin to slip backward, to whizz past them, under the influence of the multi-ship's tremendous rate of travel.

They didn't, of course. They remained nailed to the black backdrop, their distance scorning with patient immobility any speed mere Man could achieve.

The men complained bitterly after the first few days. It was not only that they were deprived of the space-float. They were burdened by much more than the ordinary pseudo-gravity field of the ships, by the effects of the fierce acceleration under which they were living. Long himself was weary to death of the relentless pressure against hydraulic cushions.

They took to shutting off the jet thrusts one hour out of every four and Long fretted.

It had been just over a year that he had last seen Mars shrinking in an observation window from this ship, which had then been an independent entity. What had happened since then? Was the colony still there?

In something like a growing panic, Long sent out radio pulses toward Mars daily, with the combined power of twenty-five ships behind it. There was no answer. He expected none. Mars and Saturn were on opposite sides of the Sun now, and until he mounted high enough above the ecliptic to get the Sun well beyond the line connecting himself and Mars, solar interference would prevent any signal from getting through.

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High above the outer rim of the Asteroid Belt, they reached maximum velocity. With short spurts of power from first one side jet, then another, the huge vessel reversed itself. The composite jet in the rear began its mighty roaring once again, but now the result was deceleration.

They passed a hundred million miles over the Sun, curving down to intersect the orbit of Mars.

A week out of Mars, answering signals were heard for the first time, fragmentary, ether-torn and incomprehensible, but they were coming from Mars. Earth and Venus were at angles sufficiently different to leave no doubt of that.

Long relaxed. There were still humans on Mars, at any rate.

Two days out of Mars, the signal was strong and clear and Sankov was at the other end.

Sankov said, "Hello, son. It's three in the morning here. Seems like people have no consideration for an old man. Dragged me right out of bed."

"I'm sorry, sir."

"Don't be. They were following orders. I'm afraid to ask, son. Anyone hurt? Maybe dead?"

"No deaths, sir. Not one."

"And—and the water? Any left?"

Long said, with an effort at nonchalance, "Enough."

"In that case, get home as fast as you can. Don't take any chances, of course."

"There's trouble, then."

"Fair-to-middling. When will you come down?"

"Two days. Can you hold out that long?"

"I'll hold out."

Forty hours later, Mars had grown to a ruddy-orange ball that filled the ports and they were in the final planet-landing spiral.

"Slowly," Long said to himself, "slowly." Under these conditions, even the thin atmosphere of Mars could do dreadful damage if they moved through it too quickly.

Having come in from well above the ecliptic, their spiral passed from north to south. A polar cap shot whitely below them, then the much smaller one of the summer hemisphere, the large one again, the small one, at longer and longer intervals. The planet approached closer, the landscape began to show features.

"Prepare for landing!" called Long.

SANKOV did his best to look placid, which was difficult considering how closely the boys had shaved their return. But it had worked out well enough.

Until a few days ago, he had no sure knowledge that they had survived. It seemed more likely

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—inevitable, almost—that they were nothing but frozen corpses somewhere in the trackless stretches from Mars to Saturn, new planetoids that had once been alive.

The Committee had been dickering with him for weeks before the news had come. They had insisted on his signature to the paper for the sake of appearances. It would look like an agreement, voluntarily and mutually arrived at. But Sankov knew well that, given complete obstinacy on his part, they would act unilaterally and be damned with appearances. It seemed fairly certain that Hilder's election was secure now and they would take the chance of arousing a reaction of sympathy for Mars.

So he dragged out the negotiations, dangling before them always the possibility of surrender.

And then he heard from Long and concluded the deal quickly.

The papers had lain before him and he had made a last statement for the benefit of the reporters who were present.

He said, "Total imports of water from Earth are twenty million tons a year. This is declining as we develop our own piping system. If I sign this paper agreeing to an embargo, our industry will be paralyzed, any possibilities of expansion will halt. It looks to me as if that can't be what's in Earth's mind, can it?"

Their eyes met his and held only a hard glitter. Assemblyman Digby had already been replaced and they were unanimous against him.

The Committee Chairman impatiently pointed out, "You have said all this before."

"I know, but right now I'm kind of getting ready to sign and I want it clear in my head. Is Earth set and determined to bring us to an end here?"

"Of course not. Earth is interested in conserving its irreplaceable water supply, nothing else."

"You have one and a half quintillion tons of water on Earth."

The Committee Chairman said, "We cannot spare water."

And Sankov had signed.

That had been the final note he wanted. Earth had one and a half quintillion tons of water and could spare none of it.

Now, a day and a half later, the Committee and the reporters waited in the spaceport dome. Through thick, curving windows, they could see the bare and empty grounds of Mars Spaceport.

The Committee Chairman asked, with annoyance, "How much longer do we have to wait? And, if you don't mind, what are we waiting for?"

Sankov said, "Some of our

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boys have been out in space, out past the asteroids."

The Committee Chairman removed a pair of spectacles and cleaned them with a snowy white handkerchief. "And they're returning?"

"They are."

The Chairman shrugged, lifted his eyebrows in the direction of the reporters.

IN the smaller room adjoining, a knot of women and children clustered about another window. Sankov stepped back a bit to cast a glance toward them. He would much rather have been with them, been part of their excitement and tension. He, like them, had waited over a year now. He, like them, had thought, over and over again, that the men must be dead.

"You see that?" said Sankov, pointing.

"Hey!" cried a reporter. "It's a ship!"

A confused shouting came from the adjoining room.

It wasn't a ship so much as a bright dot obscured by a drifting white cloud. The cloud grew larger and began to have form. It was a double streak against the sky, the lower ends billowing out and upward again. As it dropped still closer, the bright dot at the upper end took on a crudely cylindrical form.

It was rough and craggy, but where the sunlight hit, brilliant highlights bounced back.

The cylinder dropped toward the ground with the ponderous slowness characteristic of space vessels. It hung suspended on those blasting jets and settled down upon the recoil of tons of matter hurling downward like a tired man dropping into his easy chair.

And as it did so, a silence fell upon all within the dome. The women and children in one room, the politicians and reporters in the other remained frozen, heads craned incredulously upward.

The cylinder's landing flanges, extending far below the two rear jets, touched ground and sank into the pebbly morass. And then the ship was motionless and the jet action ceased.

But the silence continued in the Dome. It continued for a long time.

Men came clambering down the sides of the immense vessel, inching down, down the two-mile trek to the ground, with spikes on their shoes and ice axes in their hands. They were gnats against the blinding surface.

One of the reporters croaked, "What is it?"

"That," said Sankov, calmly, "happens to be a chunk of matter that spent its time scooting around Saturn as part of its rings.

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Our boys fitted it out with travelhead and jets and ferried it home. It just turns out the fragments in Saturn's rings are made up out of ice."

HE spoke into a continuing deathlike silence. "That thing that looks like a spaceship is just a mountain of hard water. If it were standing like that on Earth, it would be melting into a puddle and maybe it would break under its own weight. Mars is colder and has less gravity, so there's no such danger.

"Of course, once we get this thing really organized, we can have water stations on the moons of Saturn and Jupiter and on the asteroids. We can scale in chunks of Saturn's rings and pick them up and send them on at the various stations. Our Scavengers are good at that sort of thing.

"We'll have all the water we need. That one chunk you see is just under a cubic mile—or about what Earth would send us in two hundred years. The boys used quite a bit of it coming back from Saturn. They made it in five weeks, they tell me, and used up about a hundred million tons. But, Lord, that didn't make any dent at all in that mountain. Are you getting all this, boys?"

He turned to the reporters. There was no doubt they were getting it.

He said, "Then get this, too. Earth is worried about its water supply. It only has one and a half quintillion tons. It can't spare us a single ton out of it. Write down that we folks on Mars are worried about Earth and don't want anything to happen to Earth people. Write down that we'll sell water to Earth. Write down that we'll let them have million-ton lots for a reasonable fee. Write down that in ten years, we figure we can sell it in cubic-mile lots. Write down that Earth can quit worrying be-

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cause Mars can sell it all the water it needs and wants."

The Committee Chairman was past hearing. He was feeling the future rushing in. Dimly, he could see the reporters grinning as they wrote furiously.

Grinning!

He could hear the grin become laughter on Earth as Mars turned the tables so neatly on the anti-Wasters. He could hear the laughter thunder from every continent when word of the fiasco spread. And he could see the abyss, deep and black as space, into which would drop forever the political hopes of John Hilder and of every opponent of space flight left on Earth—his own included, of course.

IN the adjoining room, Dora Swenson screamed with joy, and Peter, grown two inches, jumped up and down, calling, "Daddy! Daddy!"

Richard Swenson had just stepped off the extremity of the flange and, face showing clearly through the clear silicone of the headpiece, marched toward the Dome.

"Did you ever see a guy look so happy?" asked Ted Long. "Maybe there's something in this marriage business."

"Ah, you've just been out in space too long," Rioz said.

—ISAAC ASIMOV

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By
ROBERT
SHECKLEY

WARRIOR RACE

Destroying the spirit of the enemy is the goal of war and the aliens had the best way!

THEY never did discover whose fault it was. Fannia pointed out that if Donnaught had had the brains of an ox, as well as the build, he would have remembered to check the tanks. Donnaught, although twice as big as him, wasn't quite as fast with an insult. He intimated, after a little thought, that Fannia's nose might have obstructed his reading of the fuel guage.

This still left them twenty light-years from Thetis, with a cupful of transformer fuel in the

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emergency tank.

"All right," Fannia said presently. "What's done is done. We can squeeze about three light-years out of the fuel before we're back on atomics. Hand me *The Galactic Pilot*—unless you forgot that, too."

Donnaught dragged the bulky microfilm volume out of its locker, and they explored its pages.

The Galactic Pilot told them they were in a sparse, seldom-visited section of space, which they already knew. The nearest planetary system was Hatterfield; no intelligent life there. Sersus had a native population, but no refueling facilities. The same with Illed, Hung and Porderai.

"Ah-ha!" Fannia said. "Read that, Donnaught. If you can read, that is."

"Cascella," Donnaught read, slowly and clearly, following the line with a thick forefinger. "Type M sun. Three planets, intelligent (AA3C) human-type life on second. Oxygen-breathers. Non-mechanical. Religious. Friendly. Unique social structure, described in Galactic Survey Report 33877242. Population estimate: stable at three billion. Basic Cascellan vocabulary taped under Cas33b2. Scheduled for resurvey 2375A.D. Cache of transformer fuel left, beam coordinate 8741 kgl. Physical descript: Unocc. flatland."

"Transformer fuel, boy!" Fannia said gleefully. "I believe we will get to Thetis, after all." He punched the new direction on the ship's tape. "If that fuel's still there."

"Should we read up on the unique social structure?" Donnaught asked, still poring over *The Galactic Pilot*.

"Certainly," Fannia said. "Just step over to the main galactic base, on Earth and buy me a copy."

"I forgot," Donnaught admitted slowly.

"Let me see," Fannia said, dragging out the ship's language library. "Cascellan, Cascellan . . . Here it is. Be good while I learn the language." He set the tape in the hypnophone and switched it on. "Another useless tongue in my overstuffed head," he murmured, and then the hypnophone took over.

COMING out of transformer drive with at least a drop of fuel left, they switched to atomics. Fannia rode the beam right across the planet, locating the slender metal spire of the Galactic Survey cache. The plain was no longer unoccupied, however, The Cascellans had built a city around the cache, and the spire dominated the crude wood-and-mud buildings.

"Hang on," Fannia said, and

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brought the ship down on the outskirts of the city, in a field of stubble.

"Now look," Fannia said, unfastening his safety belt. "We're just here for fuel. No souvenirs, no side-trips, no fraternizing."

Through the port, they could see a cloud of dust from the city. As it came closer, they made out figures running toward their ship.

"What do you think this unique social structure is?" Donnaught asked, pensively checking the charge in a needler gun.

"I know not and care less," Fannia said, struggling into space armor. "Get dressed."

"The air's breathable."

"Look, pachyderm, for all we know, these Cascellans think the proper way to greet visitors is to chop off their heads and stuff them with green apples. If Galactic says unique, it probably means unique."

"Galactic said they were friendly."

"That means they haven't got atomic bombs. Come on, get dressed." Donnaught put down the needler and struggled into an oversize suit of space armor. Both men strapped on needlers, paralyzers, and a few grenades.

"I don't think we have anything to worry about," Fannia said, tightening the last nut on his helmet. "Even if they get rough, they can't crack space armor. And if they're not rough, we won't have any trouble. Maybe these gewgaws will help." He picked up a box of trading articles —mirrors, toys and the like.

Helmeted and armored, Fannia slid out the port and raised one hand to the Cascellans. The language, hypnotically placed in his mind, leaped to his lips.

"We come as friends and brothers. Take us to the chief."

The natives clustered around, gaping at the ship and the space armor. Although they had the same number of eyes, ears and limbs as humans, they completely missed looking like them.

"If they're friendly," Donnaught asked, climbing out of the port, "why all the hardware?" The Cascellans were dressed predominantly in a collection of knives, swords and daggers. Each man had at least five, and some had eight or nine.

"Maybe Galactic got their signals crossed," Fannia said, as the natives spread out in an escort. "Or maybe the natives just use the knives for mumblypeg."

THE city was typical of a non-mechanical culture. Narrow, packed-dirt streets twisted between ramshackle huts. A few two-story buildings threatened to collapse at any minute. A stench filled the air, so strong that Fannia's filter couldn't quite eradi-

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cate it. The Cascellans bounded ahead of the heavily laden Earthmen, dashing around like a pack of playful puppies. Their knives glittered and clanked.

The chief's house was the only three-story building in the city. The tall spire of the cache was right behind it.

"If you come in peace," the chief said when they entered, "you are welcome." He was a middle-aged Cascellan with at least fifteen knives strapped to various parts of his person. He squatted cross-legged on a raised dais.

"We are privileged," Fannia said. He remembered from the hypnotic language lesson that "chief" on Cascella meant more than it usually did on Earth. The chief here was a combination of king, high priest, deity and bravest warrior.

"We have a few simple gifts here," Fannia added, placing the gewgaws at the king's feet. "Will his majesty accept?"

"No," the king said. "We accept no gifts." Was that the unique social structure? Fannia wondered. It certainly was not human. "We are a warrior race. What we want, we take."

Fannia sat cross-legged in front of the dais and exchanged conversation with the king while Donnaught played with the spurned toys. Trying to overcome the initial bad impression, Fannia told the chief about the stars and other worlds, since simple people usually liked fables. He spoke of the ship, not mentioning yet that it was out of fuel. He spoke of Cascella, telling the chief how its fame was known throughout the Galaxy.

"That is as it should be," the chief said proudly. "We are a race of warriors, the like of which has never been seen. Every man of us dies fighting."

"You must have fought some great wars," Fannia said politely, wondering what idiot had written up the galactic report.

"I have not fought a war for many years," the chief said. "We are united now, and all our enemies have joined us."

Bit by bit, Fannia led up to the matter of the fuel.

"What is this 'fuel?'" the chief asked, haltingly because there was no equivalent for it in the Cascellan language.

"It makes our ship go."

"And where is it?"

"In the metal spire," Fannia said. "If you would just allow us—"

"In the holy shrine?" the chief exclaimed, shocked. "The tall metal church which the gods left here long ago?"

"Yeah," Fannia said sadly, knowing what was coming. "I guess that's it."

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"It is sacrilege for an outworlder to go near it," the chief said. "I forbid it."

"We need the fuel." Fanna was getting tired of sitting cross-legged. Space armor wasn't built for complicated postures. "The spire was put here for such emergencies."

"Strangers, know that I am god of my people, as well as their leader. If you dare approach the sacred temple, there will be war."

"I was afraid of that," Fannia said, getting to his feet.

"And since we are a race of warriors," the chief said, "at my command, every fighting man of the planet will move against you. More will come from the hills and from across the rivers."

Abruptly, the chief drew a knife. It must have been a signal, because every native in the room did the same.

FANNIA dragged Donnaught away from the toys. "Look, lummox. These friendly warriors can't do a damn thing to us. Those knives can't cut space armor, and I doubt if they have anything better. Don't let them pile up on you, though. Use the paralyzer first, the needler if they really get thick."

"Right." Donnaught whisked out and primed a paralyzer in a single coordinated movement. With weapons, Donnaught was fast and reliable, which was virtue enough for Fannia to keep him as a partner.

"We'll cut around this building and grab the fuel. Two cans ought to be enough. Then we'll beat it fast."

They walked out the building, followed by the Cascellans. Four carriers lifted the chief, who was barking orders. The narrow street outside was suddenly jammed with armed natives. No one tried to touch them yet, but at least a thousand knives were flashing in the sun.

In front of the cache was a solid phalanx of Cascellans. They stood behind a network of ropes that probably marked the boundary between sacred and profane ground.

"Get set for it," Fannia said, and stepped over the ropes.

Immediately the foremost temple guard raised his knife. Fannia brought up the paralyzer, not firing it yet, still moving forward.

The foremost native shouted something, and the knife swept across in a glittering arc. The Cascellan gurgled something else, staggered and fell. Bright blood oozed from his throat.

"I *told* you not to use the needler yet!" Fannia said.

"I didn't," Donnaught protested. Glancing back, Fannia saw that Donnaught's needler was

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still holstered.

"Then I don't get it," said Fannia bewilderedly.

Three more natives bounded forward, their knives held high. They tumbled to the ground also. Fannia stopped and watched as a platoon of natives advanced on them.

Once they were within stabbing range of the Earthmen, the natives were slitting their own throats!

Fannia was frozen for a moment, unable to believe his eyes. Donnaught halted behind him.

Natives were rushing forward by the hundreds now, their knives poised, screaming at the Earthmen. As they came within range, each native stabbed himself, tumbling on a quickly growing pile of bodies. In minutes the Earthmen were surrounded by a heap of bleeding Cascellan flesh, which was steadily growing higher.

"All right!" Fannia shouted. "Stop it." He yanked Donnaught back with him, to profane ground. "Truce!" he yelled in Cascellan.

The crowd parted and the chief was carried through. With two knives clenched in his fists, he was panting from excitement.

"We have won the first battle!" he said proudly. "The might of our warriors frightens even such aliens as yourselves. You shall not profane our temple while a man is alive on Cascella!"

The natives shouted their approval and triumph.

The two aliens dazedly stumbled back to their ship.

"SO that's what Galactic meant by 'a unique social structure,'" Fannie said morosely. He stripped off his armor and lay down on his bunk. "Their way of making war is to suicide their enemies into capitulation."

"They must be nuts," Donnaught grumbled. "That's no way to fight."

"It works, doesn't it?" Fannia got up and stared out a porthole. The sun was setting, painting the city a charming red in its glow. The beams of light glistened off the spire of the Galactic cache. Through the open doorway they could hear the boom and rattle of drums. "Tribal call to arms," Fannia said.

"I still say it's crazy." Donnaught had some definite ideas on fighting. "It ain't human."

"I'll buy that. The idea seems to be that if enough people slaughter themselves, the enemy gives up out of sheer guilty conscience."

"What if the enemy doesn't give up?"

"Before these people united, they must have fought it out tribe to tribe, suiciding until someone gave up. The losers probably joined the victors; the

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tribe must have grown until it could take over the planet by sheer weight of numbers." Fannia looked carefully at Donnaught, trying to see if he understood. "It's anti-survival, of course; if someone didn't give up, the race would probably kill themselves." He shook his head. "But war of any kind is anti-survival. Perhaps they've got rules."

"Couldn't we just barge in and grab the fuel quick?" Donnaught asked. "And get out before they all killed themselves?"

"I don't think so," Fannia said. "They might go on committing suicide for the next ten years, figuring they were still fighting us." He looked thoughtfully at the city. "It's that chief of theirs. He's their god and he'd probably keep them suiciding until he was the only man left. Then he'd grin, say, 'We are great warriors,' and kill himself."

Donnaught shrugged his big shoulders in disgust. "Why don't we knock him off?"

"They'd just elect another god." The sun was almost below the horizon now. "I've got an idea, though," Fannia said. He scratched his head. "It might work. All we can do is try."

AT midnight, the two men sneaked out of the ship, moving silently into the city. They were both dressed in space armor again. Donnaught carried two empty fuel cans. Fannia had his paralyzer out.

The streets were dark and silent as they slid along walls and around posts, keeping out of sight. A native turned a corner suddenly, but Fannia paralyzed him before he could make a sound.

They crouched in the darkness, in the mouth of an alley facing the cache.

"Have you got it straight?" Fannia asked. "I paralyze the guards. You bolt in and fill up those cans. We get the hell out of here, quick. When they check, they find the cans still there. Maybe they won't commit suicide then."

The men moved across the shadowy steps in front of the cache. There were three Cascellans guarding the entrance, their knives stuck in their loincloths. Fannia stunned them with a medium charge, and Donnaught broke into a run.

Torches instantly flared, natives boiled out of every alleyway, shouting, waving their knives.

"We've been ambushed!" Fannia shouted. "Get back here, Donnaught!"

Donnaught hurriedly retreated. The natives had been waiting for them. Screaming, yowling, they

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rushed at the Earthmen, slitting their own throats at five-foot range. Bodies tumbled in front of Fannia, almost tripping him as he backed up. Donnaught caught him by an arm and yanked him straight. They ran out of the sacred area.

"Truce, damn it!" Fannia called out. "Let me speak to the chief. Stop it! Stop it! I want a truce!"

Reluctantly, the Cascellans stopped their slaughter.

"This is war," the chief said, striding forward. His almost human face was stern under the torchlight. "You have seen our warriors. You know now that you cannot stand against them. The word has spread to all our lands. My entire people are prepared to do battle."

He looked proudly at his fellow-Cascellans, then back to the Earthmen. "I myself will lead my people into battle now. There will be no stopping us. We will fight until you surrender yourselves completely, stripping off your armor."

"Wait, chief," Fannia panted, sick at the sight of so much blood. The clearing was a scene out of the Inferno. Hundreds of bodies were sprawled around. The streets were muddy with blood.

"Let me confer with my partner tonight. I will speak with you tomorrow."

"No." the chief said. "You started the battle. It must go to its conclusion. Brave men wish to die in battle. It is our fondest wish. You are the first enemy we have had in many years, since we subdued the mountain tribes."

"Sure," Fannia said. "But let's talk about it—"

"I myself will fight you," the chief said, holding up a dagger. "I will die for my people, as a warrior must!"

"Hold it!" Fannia shouted. "Grant us a truce. We are allowed to fight only by sunlight. It is a tribal taboo."

The chief thought for a moment, then said, "Very well. Until tomorrow."

The beaten Earthmen walked slowly back to their ship amid the jeers of the victorious populace.

NEXT morning, Fannia still didn't have a plan. He knew that he had to have fuel; he wasn't planning on spending the rest of his life on Cascella; or waiting until the Galactic Survey sent another ship, in fifty years or so. On the other hand, he hesitated at the idea of being responsible for the death of anywhere up to three billion people. It wouldn't be a very good record to take to Thetis. The Galactic Survey might find out about it. Anyway, he just wouldn't do it.

He was stuck both ways.

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Slowly, the two men walked out to meet the chief. Fannia was still searching wildly for an idea while listening to the drums booming.

"If there was only someone we could fight," Donnaught mourned, looking at his useless blasters.

"That's the deal," Fannia said. "Guilty conscience is making sinners of us all, or something like that. They expect us to give in before the carnage gets out of hand." He considered for a moment. "It's not so crazy, actually. On Earth, armies don't usually fight until every last man is slaughtered on one side. Someone surrenders when they've had enough."

"If they'd just fight *us*!"

"Yeah, if they only—" He stopped. "We'll fight each other!" he said. "These people look at suicide as war. Wouldn't they look upon war—real fighting—as suicide?"

"What good would that do us?" Donnaught asked.

They were coming into the city now and the streets were lined with armed natives. Around the city there were thousands more. Natives were filling the plain, as far as the eye could see. Evidently they had responded to the drums and were here to do battle with the aliens.

Which meant, of course, a wholesale suicide.

"Look at it this way," Fannia said. "If a guy plans on suiciding on Earth, what do we do?"

"Arrest him?" Donnaught asked.

"Not at first. We offer him anything he wants, if he just won't do it. People offer the guy money, a job, their daughters, anything, just so he won't do it. It's taboo on Earth."

"So?"

"So," Fannia went on, "maybe fighting is just as taboo here. Maybe they'll offer us fuel, if we'll just stop."

Donnaught looked dubious, but Fannia felt it was worth a try.

THEY pushed their way through the crowded city, to the entrance of the cache. The chief was waiting for them, beaming on his people like a jovial war god.

"Are you ready to do battle?" he asked. "Or to surrender?"

"Sure," Fannia said. "Now, Donnaught!"

He swung, and his mailed fist caught Donnaught in the ribs. Donnaught blinked.

"Come on, you idiot, hit me back."

Donnaught swung, and Fannia staggered from the force of the blow. In a second they were at it like a pair of blacksmiths, mailed blows ringing from their armored hides.

"A little lighter," Fannia gasp-

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ed, picking himself up from the ground. "You're denting my ribs." He belted Donnaught viciously on the helmet.

"Stop it!" the chief cried. "This is disgusting!"

"It's working," Fannia panted. "Now let me strangle you. I think that might do it."

Donnaught obliged by falling to the ground. Fannia clamped both hands around Donnaught's armored neck, and squeezed.

"Make believe you're in agony, idiot," he said.

Donnaught groaned and moaned as convincingly as he could.

"You must stop!" the chief screamed. "It is terrible to kill another!"

"Then let me get some fuel," Fannia said, tightening his grip on Donnaught's throat.

The chief thought it over for a little while. Then he shook his head.

"No."

"What?"

"You are aliens. If you want to do this disgraceful thing, do it. But you shall not profane our religious relics."

DONNAUGHT and Fannia staggered to their feet. Fannia was exhausted from fighting in the heavy space armor; he barely made it up.

"Now," the chief said, "surrender at once. Take off your armor or do battle with us."

The thousands of warriors—possibly millions, because more were arriving every second—shouted their blood-wrath. The cry was taken up on the outskirts and echoed to the hills, where more fighting men were pouring down into the crowded plain.

Fannia's face contorted. He couldn't give himself and Donnaught up to the Cascellans. They might be cooked at the next church supper. For a moment he considered going after the fuel and letting the damned fools suicide all they pleased.

His mind an angry blank, Fannia staggered forward and hit the chief in the face with a mailed glove.

The chief went down, and the natives backed away in horror. Quickly, the chief snapped out a knife and brought it up to his throat. Fannia's hands closed on the chief's wrists.

"Listen to me," Fannia croaked. "We're going to take that fuel. If any man makes a move—if anyone kills himself—I'll kill your chief."

The natives milled around uncertainly. The chief was struggling wildly in Fannia's hands, trying to get a knife to his throat, so he could die honorably.

"Get it," Fannia told Donnaught, "and hurry it up."

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The natives were uncertain just what to do. They had their knives poised at their throats, ready to plunge if battle was joined.

"Don't do it," Fannia warned. "I'll kill the chief and then he'll never die a warrior's death."

The chief was still trying to kill himself. Desperately, Fannia held on, knowing he had to keep him from suicide in order to hold the threat of death over him.

"Listen, Chief," Fannia said, eying the uncertain crowd. "I must have your promise there'll be no more war between us. Either I get it or I kill you."

"Warriors!" the chief roared. "Choose a new ruler. Forget me and do battle!"

The Cascellans were still uncertain, but knives started to lift.

"If you do it," Fannia shouted in despair, "I'll kill your chief. *I'll kill all of you!*"

That stopped them.

"I have powerful magic in my ship. I can kill every last man, and then you won't be able to die a warrior's death. *Or* get to heaven!"

The chief tried to free himself with a mighty surge that almost tore one of his arms free, but Fannia held on, pinning both arms behind his back.

"Very well," the chief said, tears springing into his eyes. "A warrior must die by his own hand. You have won, alien."

The crowd shouted curses as the Earthmen carried the chief and the cans of fuel back to the ship. They waved their knives and danced up and down in a frenzy of hate.

"Let's make it fast," Fannia said, after Donnaught had fueled the ship.

He gave the chief a push and leaped in. In a second they were in the air, heading for Thetis and the nearest bar at top speed.

The natives were hot for blood —their own. Every man of them pledged his life to wiping out the insult to their leader and god, and to their shrine.

But the aliens were gone. There was nobody to fight.

—ROBERT SHECKLEY

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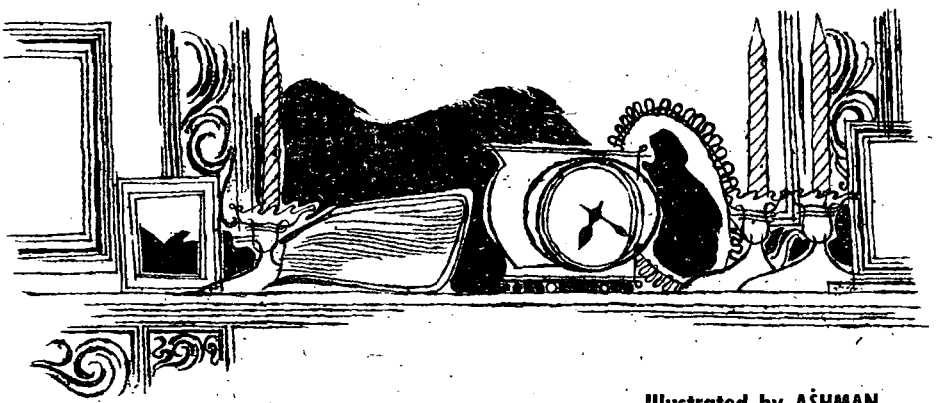

Illustrated by ASHMAN

Sugar Plum

By R. BRETNOR

If not for two items, this would be a funny story—the Atomic Age brought back the 1925 vogue, and inhibition is not shatter-proof.

ON A clear spring evening in 2189, Charles Edward Button came home half an hour late for his supper, tossed his hat to the robot butler who came out from behind the DoIt-All, and announced that he had just bought a planet.

His wife, Betty, was looking small and long-suffering on a plastic reproduction of a Victorian love-seat, and her cousin Aurelia, a large, handsome woman, was standing behind her protectively.

"Of course," he informed them, "it's not a *big* planet. But what a bargain! With real oceans, and two moons, and—"

"Real estate, real estate, real estate!" Cousin Aurelia's tart voice cut him off in mid-sentence.

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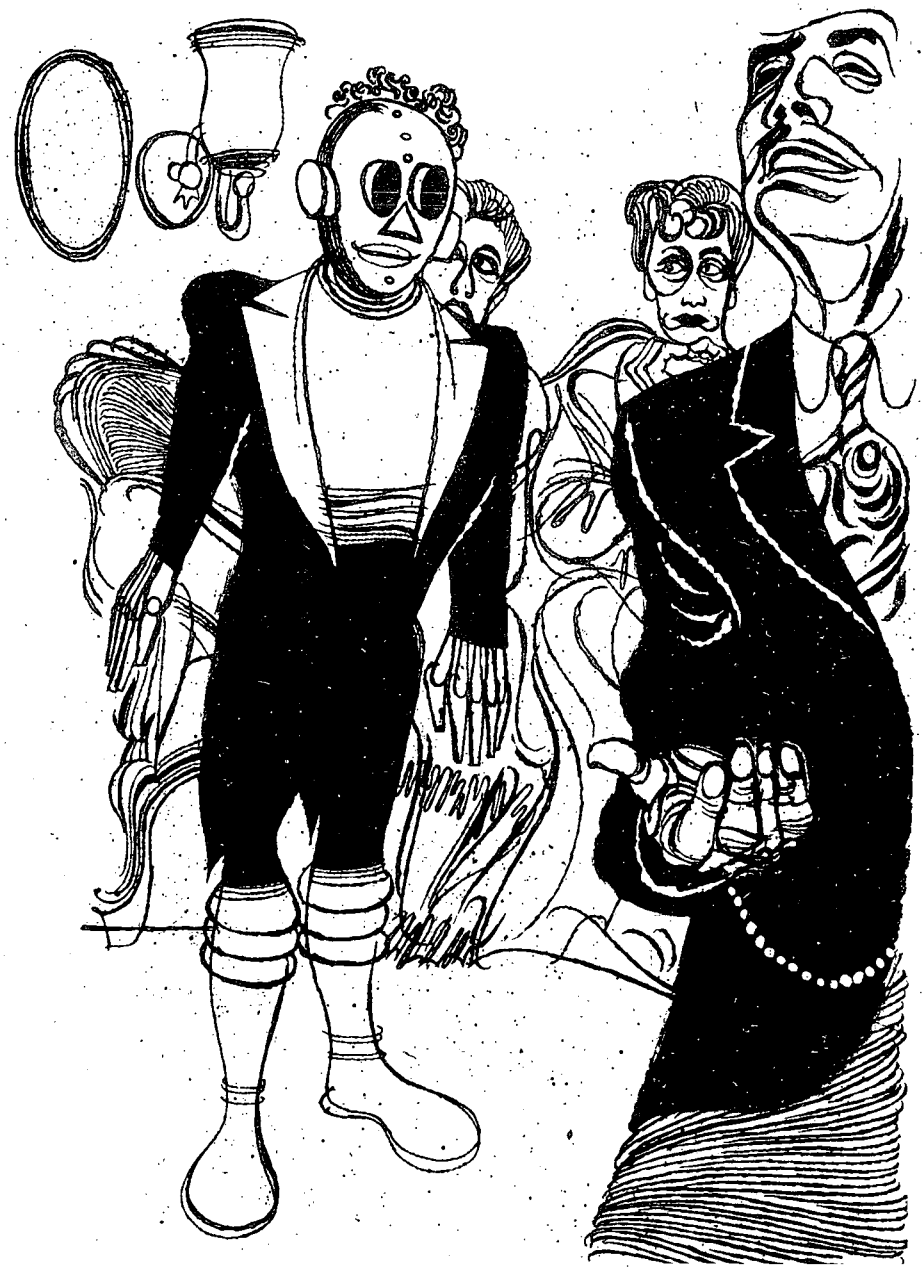

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"You know what's come of every one of your investments. Call the man *right now* and tell him you want your money back!"

"I'm afraid it's too late." Charles avoided her eye. "I bought it up at a tax-auction and —well, the government never refunds."

"I *thought* so. A planet nobody wants. Probably all run down, with swamps and deserts, and in some dreadful, shabby district where the neighbors have squirmy tentacles, or eyes on stalks, or big, nasty beaks!"

"It isn't at all. It's in a good neighborhood—only two systems away from the Inchcapes' new summer planet. A little remote, but that means more privacy." He took a catalogue out of his pocket. " 'Parcel 71,' " he read. " 'Sugar Plum, a Class IV planet' —that means it's like Earth, only bigger — 'claimed 8/12/85 by Space Captain Alexander Burgee, under Planetary Homestead Act of 2147 (amended.)' And here's his description of the place where he landed: 'Neat as a pin, fine climate, full of critters and fish, quite uninhabited.' He was lost in Deep Space, poor fellow. That's why they sold it."

BETTY smiled faintly. "The Inchcapes call their planet Bide-A-Wee. I think Sugar Plum's ever so much nicer. But—but can we afford it?"

"We certainly can't!" fumed Cousin Aurelia. "We'll put it back on the market and salvage whatever we can."

"No, we won't," Charles said firmly. "And it's not just a summer resort. We're pulling up stakes to live there all year round."

Betty gasped.

Cousin Aurelia straightened up, bristling.

"I have made up my mind," Charles went on. "I have done a lot of serious thinking." He pointed at the heavily framed neo-daguerreotype portraits on the walls. "Our ancestors rediscovered the only *true* principles, those of the great Nineteenth Century. They brought the Second Victorian Age into being. Civilization reached its peak, its full flowering. But now all is crumbling before the poisonous onslaught of modernism. We who have not been corrupted must seek out a refuge. That, Cousin, is why I bought Sugar Plum."

"Nonsense!" exclaimed Cousin Aurelia. "There may be changes everywhere else, but never in Boston."

"Ha!" Charles looked at his watch. "Solomon!" he called out.

The butler came bowing out of the DoItAll nook, where the servants stayed when they were switched off. He wore a swallow-

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tail coat and knee-breeches, and had kinky white hair. Made to order, he was Cousin Aurelia's idea.

"Yassuh, Marse Charles. Here Ah is."

"Solomon," ordered Charles, "tune in Watson Widgett."

Betty paled, uttering a polite little scream.

"Are you *mad?*" cried Cousin Aurelia. "I've heard about him. I'll not have that man in *my* home!"

CHARLES squared his shoulders. "Cousin, may I remind you that *I* am head of this house, and that we are *Victorians?* It's high time you found out what's going on. Solomon!"

"Yass*uh*."

There was a click from the DoItAll, a brief flash of light and a figure appeared in their midst, a cheerful young man in loose trousers and shirt, without coat, waistcoat, cravat, or even a pair of suspenders. He was grinning at Cousin Aurelia.

"Boys and girls," he was saying, "Wyoming has outlawed corsets! The folks in Siskiyou, California, have given women the vote! And listen to this. The Bikini swimsuit—just a wisp and a twist—is back on the market!" He winked loathsomely. "Yes, indeed, our prize fake Victorians, our second-hand stuffed shirts, are due for a fall. Here's the best news today, from a cute little lady right here in old Boston." He unfolded a paper. "Dear Watsy, When I first found your program, I was a real Mrs. Biedermeyer. Marriage was something we gentlewomen tried to endure while we knitted an antimacassar. It wasn't supposed to be fun. Then a friend tipped me off to your—"

At this point, Cousin Aurelia emitted a shriek, rolled her eyes and crumpled to the carpet.

Charles gestured and the commentator vanished with a click and a flash. Betty scurried out and returned with the smelling salts.

Presently, Cousin Aurelia regained her senses, shivered, and said, "It's too awful for words. If it were not for Betty, I would surely have left long ago. As it is, I shall go where you go, to protect her, of course."

Then she permitted Betty to help her to her feet and out of the room.

"Solomon!" Charles called loudly.

"Yassuh, Marse Charles."

"Set the table for two," Charles commanded. "I shall dial the dinner myself."

He felt very adventurous and masterful. Dialing dinner without aid was fine training in self-reliance.

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SIX weeks later, the three of them stood on the bridge of the space freighter *Beautiful Joe,* watching Sugar Plum as the vessel entered an orbit around it.

But Charles Edward Button didn't feel at all masterful, or even adventurous.

They stood next to Possett, the skipper, a great, hairy man with gold teeth, a bad squint, and an air of gloomy cunning about him. After her first look at Possett, Cousin Aurelia had locked herself in her cabin, allowing no one but Betty to approach her, and threatening to subsist on the half-dozen cases of Dr. Stringfellow's Vegetable Remedy she kept under her berth. Charles, however, had been sure that Possett's heart was both kindly and chivalrous.

"Take those tall stories of his," he said more than once. "Betty, they don't mean a thing. Old spacedogs love to kid tenderfeet. Imagine trying to make me believe that it's dangerous out here! And all that malarkey about Captain Burgee being a pirate or something!"

They stared at Sugar Plum, at its small polar ice caps, its seas, its continents greener than Earth's, its wandering white clouds. Not many hours before, it had been only a dust mote, a pinpoint of light in the void. Now it filled half the sky. And suddenly Charles understood the immensities, the unspeakable stretches of space in which Boston had vanished.

Shivering, he wished he were home, stiffly safe in a curlicued chair, with Solomon dialing his dinner for him.

"Nice piece of property," grunted Possett around his cigar. "Too bad about—" He broke off with a shrug.

"About what?" asked Charles, alarmed.

"I wouldn't want to be in your shoes if Burgee comes around and finds you'd run off with his planet."

"Burgee? He was lost out in space!"

"His kind don't stay lost. Chances are he's hiding out from the law. But it's none of my business. Just thought I'd warn you."

Charles laughed weakly. "You c-can't frighten me. I'm sure there aren't any pirates in space any more."

Possett turned to his weasel-faced mate. "Loopy, call the New Texas spaceport. Get Mac on the screen."

The mate nodded. He twiddled a dial and punched at a switch. The screen glowed. After some seconds, the face of a red-haired person appeared, looking rather disgusted.

"New Texas, New Texas,"

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came a voice. "I hear you, *Beautiful Joe*. What the hell do you want?"

"Dude aboard wants some info," said Possett. "Wants to know what Burgee did for a living—Alexander Burgee. Also, are the coppers still trying to find him?"

The face frowned. "Possett, you know damn well Burgee was a pirate. You know he's been listed as lost. Now quit wasting my time. New Texas out."

THE face vanished. The mate snickered nastily. And Charles just stood there gaping.

"A real pirate!" squeaked Cousin Aurelia. "Wh-what would he do? Would he *kill* us?"

"Might do anything. But—" eying her, Possett leered—"he's like me. Likes 'em well fattened up. Lady, you needn't worry."

Cousin Aurelia paled. She started to sway. Then, perhaps recalling the uncarpeted deck, she recovered and looked haughty instead.

"I am going right back to my cabin," she proclaimed, and stalked off the bridge.

"Cousin Aurelia is very genteel," Betty snapped at the captain. "You had no right to insult her. Besides, she's only twenty pounds overweight."

"Don't mind me. I go for her type." Possett shook his head darkly and turned toward Charles. "Button, man to man, a back-country planet's no place for the ladies. Look, I'll take the thing off your hands. I can handle Burgee. Twelve thousand cold cash for your stuff and the deed, and I'll throw in a lift to New Texas. There's a liner from there."

Charles thought of the comfortable Earth and was tempted. "But I paid thirty-five," he protested uncertainly. "I mean, twelve is—"

"Take it or leave it. I'm trying to do you a favor."

"No, I guess we'll leave it," answered Betty.

Charles looked around in surprise. Her lips were compressed, her blue eyes narrowed with astonishing determination.

"We've come all this way," she declared, "so we might as well keep it. I think it has—well, possibilities. We've had the whole house done over and the servants remodeled. And we'll have all the DoItAll services—teleprojection, medical care, and everything else—from the New Texas substation. I'm sure we'll get along nicely."

The skipper of the *Beautiful Joe* wasn't pleased. "It's your necks. Don't be blaming me for what happens," he growled. "Well, where do you want to set down?"

"Set down?" gulped Charles.

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"R-right now?"

"Land and unload, it says in the contract. I ain't got all day. I'll dump you at Burgee's old landing, load up with fresh water, and blast off for New Texas."

Charles had no other spot in mind.

"Okay," Possett said to the two robot crewmen at the main controls, "take her down."

AT the waterfall's edge, flowering trees twisted their roots in the cliffside, and a fresh wind scattered plumes of its spray through their leaves. Taller trees, bell-blossomed, fanned out from the pool, gave way to a meadow, and followed the course of the stream down a broadening valley—among faceted boulders of translucent quartz, rose-pink, green, and golden, sheltering small, lustrous spires of fragile fungi.

On the meadow stood the house, the latest in Second Victorian, complete with carved plastic false-front in early Schenectady Gothic. The Buttons themselves, with Cousin Aurelia, stood in front of it. They wore long linen dusters and sun helmets with heavy mosquito veils. They were going exploring.

Cousin Aurelia was sputtering: "Do you know what he said when he left? 'Kid, you come along with Mike Possett. You don't want no part of that planet. I'll show you a ripsnorting time!' Then he gave me a look that—that was positively *lecherous*." She shuddered. "At least we'll have no more of that nonsense. Your planet is uninhabited."

Betty looked worried. "I've the funniest feeling," she said. "As if someone was watching."

"That's absurd!" snapped Cousin Aurelia. "You must be imagin—" She stopped in her tracks. "Wh-what's *that?*"

They looked. A large, soft, fuzzy beast had come out from under the trees. It was reddish and had very big feet. It blinked at them brightly, climbed a transparent green rock, and started to whistle, not too tunefully, through its long Roman nose.

Almost instantly, another emerged, a size smaller. Lowering its eyelids coquettishly, it began clapping its forepaws.

"Charles, they must be the 'critters' Burgee mentioned in that catalogue. Remember? I'm sure they're perfectly harmless."

TWO more animals appeared and made for a rock of their own. And then there were, suddenly, dozens—all around the edge of the meadow. These were petite, creamy, with lavender ears. They came bounding forward in pairs, sat up and regard-

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ed the Buttons solemnly.

Charles began to relax. Somehow, Sugar Plum didn't seem half so enormous any longer, now that they weren't so alone.

"I wonder if they could be tamed." Betty was wistful.

"They're certain to be just full of fleas," sniffed Cousin Aurelia.

The creatures were playful. As the Buttons walked over the meadow, they frolicked around them—

But they also were very affectionate. As they frolicked, they flirted. Every once in a while, each pair would pause to rub noses, to murmur seductively, to nip one another.

At first, Cousin Aurelia tried to pretend they weren't there. But finally she halted. "Charles Edward Button, I won't go a step farther till you drive those nasty things away. It's disgraceful. They're apt to do—anything!"

Charles flushed under his netting. "Shoo!" he said ineffectively. "Beat it!"

There was a swift patter of feet straight ahead and a figure flashed into view. She was slim. She was small, with a girdle and headdress of feathers. Her skin was sky-blue, and her ears were pointed, and her eyes were simply enormous. But she looked distressingly human.

In an instant, she vanished. As the Buttons stood there goggling, they heard more running footsteps, somewhat heavier, and a scuffle, a giggle, a clear, tenor laugh, and then silence.

"Why, that was a girl!" Betty gasped.

"She was being pursued!" Charles exclaimed. "He—he caught her!"

"Oooh!" moaned Cousin Aurelia, covering her eyes. "Charles, how *could* you? Enticing us here, saying it was uninhabited!"

Then, before Charles could find a reply:

"Uninhabited?" chuckled a deep male voice right behind them. "It certainly isn't. It's just uninhibited!"

SLOWLY, the Buttons turned around. There, by an odd square tree, stood a man even bigger than Possett, smoking a pipe. He was middle-aged. He wore a heavy brown beard, khaki shorts, a deep coat of tan, and a self-possessed smile.

He bowed. "Burgee is my name—Space Captain Alexander Burgee. Glad to make your acquaintance."

"It's him!" screamed Cousin Aurelia. "And he's practically naked!" She pointed a cotton-gloved finger, began backing away. "You fiend, don't you come any nearer. Don't you *touch* me!"

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The captain looked very surprised. "Why would I want to?"

Her voice reached a new high and clung there. "You—you libertine! You may lead a riotous life with these natives, but you won't work your will on me. I'll lock myself in till the police can come from New Texas!"

And, tripping and stumbling over her duster, she fled.

As the door banged behind her, the captain nudged a large beast off a nearby rock, and sat down. "I can see that Earth hasn't changed," he remarked. "You tourists still seem to have the daffiest notions." He sounded quite hurt. "Look, these natives are nice little people. They're harmless. I call 'em my Sugar Plum pixies, and sometimes we grin at each other. But that's all. They aren't much past the animal stage. Besides, they lay eggs. Oh, well—" he shrugged as the Buttons exchanged knowing looks— "I have plenty of room at the house and I guess you'll be permanent guests, so welcome to Sugar Plum, anyway."

Betty said angrily, "Sugar Plum's ours. You didn't pay taxes and they sold it at auction. Charles has the deed in his pocket."

"You poor, dumb kids!" The captain seemed really concerned. "You bought some fool bureaucrats error. I'm paid up in advance. Come on down, you can see the receipt."

"Aren't you clever?" said Betty scornfully. "Well, you won't trap us as easily as that. We don't need you or your house."

"You just might want something to eat, or a hot, soapy shower, or a tight roof over you when it rains."

The Buttons smiled triumphantly. They had their own house, with a DoItAll to do everything for them.

"You can leave us alone, Mr. Pirate Burgee. Captain Possett told us your whole horrible story, and Cousin Aurelia is calling the police right this minute."

"Possett?" The captain's face twitched. "Mike Possett, of the *Beautiful Joe?*"

"That's right." Charles felt very superior. "Now you beat it before—"

He didn't finish. From the house came a loud, anguished cry.

They whirled.

Cousin Aurelia, dishelved, without helmet or duster, was almost upon them.

"Charles! It won't work!"

She reached him, threw her arms round his neck and hung on.

"I can't turn the servants on, or the teleprojection, or even the keys to the closets. Oh, Charles, we'll have nothing to eat, or to

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drink, or to wear!"

"That's impossible. DoItAlls never break down."

"We can't live without it!" screeched Cousin Aurelia. "We're millions of miles from Boston! We're marooned with that monster!"

BURGEE'S long, low house was indecently plain, without even so much as a gimcrack or bit of gingerbread decoration. Its many wide windows looked out over a lake set with islands. Its living room had broad, cushioned couches and indolent chairs—all suspiciously comfortable.

In exactly such houses, Charles knew, in the wicked old days, a fate worse than death had been practically part of the fixtures.

"We shouldn't have let him persuade us," he worriedly told Betty. "Perhaps we'd have starved, but at least Cousin Aurelia wouldn't have locked herself alone into a strange pirate's bedroom!"

"We've been here all afternoon," Betty pointed out, "and he hasn't tried anything yet. Besides, he helped carry those cases of hers and he gave her the keys himself. It's peculiar. Oh, Charles, do you suppose that—that it's *me* he's after?"

Before he could answer, a robot came in, a practical, old-fashioned model with four arms for waiting at table.

"Dinner is served." It snapped its aluminum jaws. "Come to the dining room, please."

Reluctantly, they obeyed.

"Whatever you do," whispered Charles warningly at the door, "don't let him ply you with liquor."

The captain stood at the head of the table. He was in full evening dress, with a heavy gold-nugget watch chain across his muscular middle. He smelled faintly of mothballs and looked very respectable.

The Buttons examined the table. There wasn't a sign of absinthe or brandy or even champagne. There was nothing but water.

"It's too bad your cousin won't join us," said the captain, seating them courteously. "I hope those cartons of hers have something tasty inside them."

"They contain Dr. Stringfellow's Vegetable Remedy and Tonic for Gentlewomen," replied Betty primly. "It is said to be very nourishing."

Their host shuddered. Recovering, he clapped his hands sharply. "Oh, steward!"

"Aye, aye, sir!" said the robot, appearing with a big silver tureen and setting it down on the table.

The Buttons drew back.

"I can see you don't trust me," laughed the captain. "So we'll

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serve everything out in plain sight. You can shuffle the plates if you want to." He proceeded to ladle out a clear, fragrant soup. "There. Take whichever you want."

The Buttons selected their plates. They picked up their spoons, dipped them nervously, made rowing motions.

THE captain ate heartily, talking away between spoonfuls. He told them that Sugar Plum was surrounded by an ionized layer impervious to DoItAll waves. He said he had no use for such gadgets, or for the Age which produced them.

"And why," he demanded, "did we become fake Victorians? Why are we worse than the real ones? I'll tell you. Because space was too big. It made people feel puny. They wanted a hole to crawl into — something small, safe and stuffy."

As course followed course, he told them how he had retired from piracy after homesteading Sugar Plum. Alone with his robots, he had dismantled his vessel, using its engines for heating and lighting. He had done a good deal of exploring.

The robot served something like lobster, and something like grouse, and a roast which might have been venison. It served vegetables in pink, pear-like clusters and long, golden pods. It served a crisp, succulent salad.

Charles picked at his food, watching Betty with growing uneasiness. First, her appetite seemed to improve. Then her eyes started to sparkle, and the severe little corners of her mouth began to relax. Leaning forward intently, she became more and more absorbed in the captain.

"—and so here I've been ever since," he said, as he finished his salad, "and Sugar Plum's just about perfect. Of course, it gets lonely at times, but—"

Abruptly, Betty's hand darted out, grabbed the captain's beard.

"*Beaver!*" she shouted, laughing and pulling. Then she settled back, blushing. "I've wanted to do that for years."

Charles reeled. Here was a crisis! He started to rise; hesitated. Of course, he was shocked to the core, but, "Great Scott, she's pretty!" he thought; and at once he felt guilty.

He stood up, trying hard to look angry.

"Elizabeth," he announced, "you will leave this room—er—instantly."

"Why?" giggled Betty.

"Because *ladies* do not pull gentlemen's beards."

The captain was holding his sides and rocking with laughter.

"Now, now," he protested. "Let her get it out of her system.

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'Beaver's' a splendid old custom. It's almost Victorian."

Betty dimpled, resting her chin on the backs of her interlaced hands. "Don't pay any attention, Captain Burgee. Charlie's a horrid old fuss-pot. Why shouldn't I yank at your beard? I like you."

"Betty, the man is a *pirate!*"

"Not any more. He's retired. You heard him say so yourself. Anyhow, I like him. I think he'd make an awfully nice husband for Cousin Aurelia."

CHARLES reached for the water, and drained his glass in a spluttering gulp.

"I think so, too," the captain agreed, looking pleased. "I thought so as soon as I saw her. She's exactly my type." He sighed. "But she does seem a little unfriendly. Do you suppose a guitar and some old-fashioned songs at her window might—well, make her want to get better acquainted?"

Charles thought, "Not that sour old prune!" Surprised at himself, he swallowed the words just in time.

Betty snickered. "Poor Cousin Aurelia! I simply can't get over her staying locked in with nothing but Vegetable Remedy. Why, it tastes just like shoe polish. And it's all because she's scared to death to eat or drink anything here. She believes that Sugar Plum's really an—an uninhibited planet!"

She stopped. She stared at the captain. "What's the matter?"

"I'm afraid," he said, looking very serious, "that you don't understand. Your Cousin Aurelia is right."

Betty wilted. "You can't mean it!"

"I don't know exactly what does it. Maybe it's something in the water and air and food—"

Charles stared at the plates on the table in horror.

"It's nothing you need be afraid of," the captain went on. "You see, its effect just depends on the kind of person you are way inside."

Betty began to perk up. She eyed Charles appraisingly.

"Is Charles the right kind of person?" she asked.

"I'm sure he is, and your cousin is, too, though she keeps it pretty well hidden. If they weren't, Sugar Plum would soon let us know it, believe me." He grinned. "And now let's all go a-courtin'. I'll get my guitar and call Herman."

He went to the door and whistled, and instantly a large reddish creature came lolloping in. It saw the guitar and blinked eagerly.

Betty linked her arm in the captain's. "Come along, Charlie."

Charles fumbled around. He was scared.

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Then Betty looked over her shoulder and smiled. It was a completely new smile. He had never seen it before. It made him tremble with apprehension.

"You know," she said softly, "I think it'll sort of be fun being uninhibited."

Charles knocked over a glass, and his chair, and he paused only to drink some more water.

"So," he shouted, "do I!"

"I suspected you might," said the captain.

TOGETHER they went out on the porch and sat down in a swing; and, for a few moments, in silence, they watched Sugar Plum's two moons sailing through the strange, perfumed sky. The larger was celadon green; the smaller, off-white, was glowing, gleaming.

Finally, "Cousin Aurelia?" called Betty.

"Betty, are you out in the dark with that man?"

"Charles and I both are. But he isn't a pirate any more and he's really quite nice. Besides, he's going to sing to you."

"You tell him to go away—far away. I've barricaded the window and I have my sharp scissors. I warn you, if he makes one false move—"

"This is where I came in," remarked Charles.

The captain settled back, tuned his guitar, and started to sing in a warm bass-baritone, with Herman whistling a tenor obbligato through his nose. Betty and Charles thought the effect was charming, even if Herman did tend to go a bit flat on the high notes.

First, the captain sang *Down by the Old Mill Stream* and *Sweet Genevieve*. Then he tried a number of sentimental arias from the more respectable operas, and *The Lost Chord,* and several other old favorites.

Occasionally, Cousin Aurelia sniffed loudly, but she said nothing until his serenade came to an end.

"Betty!" she called. "Can you hear me?"

"Do I have to?"

"Tell that person out there that it has done him no good to make those ungodly noises. My fingers have been in my ears all the time."

"You must've been really a sight," giggled Betty.

"Betty! You—you sound different, somehow."

"Oh, I am! So is Charles. We're both uninhibited now."

There was one cry of horror from Cousin Aurelia and then silence.

Betty turned to the captain. He looked downcast, and Herman did, too.

"We'll just have to try some-

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thing else, something clever," she told the captain. "Cousin Aurelia seems dead set against you. It's because of your being a pirate, I guess."

CHARLES and Betty spent the next couple of days avoiding any mention of the captain's former profession and helping him think up new ways to uninhibit Cousin Aurelia. He tried singing again, this time with an augmented chorus of Herman's relations. When that also failed, he cooked her a fine mushroom omelette. Then he caught her a young animal with lavender ears to keep as a pet and he spent a whole evening reading *Sonnets from the Portuguese* aloud at her window.

She responded with sniffs and with occasional scraping noises of furniture being moved to reinforce her defenses. Finally, to Betty's distress, she pushed out a note announcing that henceforth she would have nothing to do with the Buttons—and that no one could tell her that poems like those were *Victorian*.

Before the third day was half over, the Captain was moping around, Charles was peevish, and Betty had started to worry and fret.

So, in the late afternoon, they went on a picnic. Followed by Herman, and by the four-armed dining room robot carrying two wicker hampers, they walked around the lake to a broad grassy knoll where the strange square trees grew in a circle, and prisms of quartz leaned from the ground like Druids turned into stone. While they ate, the night advanced softly, its moons weaving crystalline shadows of celadon, rose, and old ivory.

Betty waited until the last hint of daylight had vanished. Then, "It's lovely," she whispered. "Poor Cousin Aurelia, it'd all be so simple if she'd only come out, but — oh, I'm afraid that it's hopeless!"

"Hopeless?" Charles snorted. "It's easy. We'll break into her room, me and Burgee, and hold her while you pour some of Sugar Plum's water down her gullet. She'll be fixed up before she finds out what hit her."

"We mustn't do that," the captain said stiffly. "We can't employ violence."

"Look who's talking!" Charles was amused. "An old pirate like you. Robbing ships, making passengers walk the plank into space, shooting people with ray guns, and—"

"Shh!" Betty warned. "Charles, that isn't polite. You know he's sensitive about—"

The captain seemed to be strangling. "And I thought it was *snobbery!*" Then he exploded

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with laughter. He lay back on the grass and he howled.

The Buttons stared in amazement, and some creatures came out of the trees to see what the uproar was all about.

THE captain sat up. "What century is this?" he asked.

"The Twenty-second, of course," answered Betty. "But — but why?"

"I just wondered. I'll tell you later." He controlled himself with an effort. "But we really mustn't use force on Aurelia, even in such a good cause. It might turn her into the wrong kind of person."

"Turn her?" Betty repeated sadly. "I'm afraid that she already is. I don't think she'll ever come out. I'm afraid she'll do something desperate."

"I'm worried, too," the captain admitted, "but I'm certain she is the right kind. The wrong kind of people can't live here. Sugar Plum doesn't like them."

Betty and Charles both looked puzzled.

"I'll try to explain. It happens within a few hours, even if they aren't uninhibited. If they are, then it's practically instantaneous. It's a—"

He broke off and looked up at the sky with a frown. There was an angry red glow right above them, a far-distant roar.

They leaped to their feet. The glow brightened swiftly. It seemed to be headed straight for them. The sound filled the air.

"We have visitors!" shouted the captain.

"Wh-who?" stammered Betty. "The police?"

"They don't use braking jets any more. It's an obsolete freighter."

"Oh!" Betty put her hands to her face in terror. "It's the *Beautiful Joe*. That man Possett—he's coming back after Cousin Aurelia!"

The red glow passed to the northward. They saw the ship's shape for a moment, spurting flame, slowing. Then it dropped out of sight. The ground shuddered briefly. There was quiet.

The captain grabbed Betty's arm. "They're down in the clearing. Quick! When he dropped you, did Possett take anything with him?"

"Just a fresh supply of water."

"My God!" blurted Charles. "That means they're—"

"*Uninhibited!*" yelled the captain. "And they're the wrong kind of people. Betty! Charles! Can you run? Hey, Steward, give them a hand!"

"Aye, aye, sir," snapped the robot, hoisting the hampers and reaching an elbow to each of the Buttons.

"Then let's go. I hope we can make it in time to save them!"

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"*Them?*" gulped Charles, as the robot started to run.

But the captain already was too far ahead to have heard him.

PULLED by the untiring robot, Charles and Betty made very good time, but they couldn't catch up with the captain. They had to make several stops to get their wind back, and they were still half a mile from the house when they heard her.

"Help! Murder! Police! Save me!" screamed Cousin Aurelia.

"He — he's got her!" puffed Charles, as the shrieks died away. "Hurry!"

When they got to the house, it was empty. Not even Herman was there. In the living room and the hall, there were signs of a titanic struggle. The door of Cousin Aurelia's room hung wide open.

"Look!" Charles gave it a great goldfish stare. "She unlocked it herself!"

"He probably told her—he was rescuing her—from the pirate," panted Betty.

"We—we'll have to go on—" Charles felt his legs start to collapse—"to the clearing."

The robot put two arms around him, and one around Betty.

"You will rest for three minuts," it stated, leading them to the living room and seating them gently. "I will bring brandy."

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The brandy was welcome. They drank it in gulps, and worried about Cousin Aurelia, and the robot fanned them considerately while they did so.

Then, again, they were off. In less than ten minutes, they looked down on the valley, on the clearing. They caught sight of the *Beautiful Joe*. The voice of the waterfall reached them.

And so did another one. A man's voice. A deep one.

"Ow!" it yelled hoarsely. "Let me up! Ow! Let go!"

Charles moaned. "We shouldn't have waited for brandy. Now they're killing him, too!"

With the robot behind them, they raced down the hill, splashed through the stream, broke through a circle of giggling Sugar Plum natives and goggle-eyed creatures.

"Don't give up!" croaked Charles. "We're coming!"

On the grass were four figures. Two were thrashing around and being sat on. Two were doing the sitting.

The Buttons braked to a stop. Something was radically wrong. The larger of the two thrashing figures was being sat on by Cousin Aurelia!

"Try to kidnap *me*, will you?" *Slap*. "Make me throw myself into that pool!" *Slap*. "And swallow a gallon of water and have to drag myself out!" *Slap-slap-*

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slap. "You will, will you?"

"Ow!" cried the figure. "Leg-go!"

AURELIA looked over her shoulder. She spied Charles and Betty.

"Hey!" she shouted. "Bear a hand here with Possett!"

"You don't have to hold him," called Captain Burgee, dismounting from Loopy the mate. "He can't get away. Sugar Plum's got him."

They both rose and the two writhing figures continued to writhe.

"They're *scratching*," Charles exclaimed.

He wasn't quite right. The skipper and the mate of the *Beautiful Joe* were trying to scratch, but they didn't have enough hands. They were groaning, and bleating, and begging for aid as they wriggled.

Cousin Aurelia gave Possett a push with her foot.

"I'm soaked to the skin," she announced. "Betty, help me off with this dress. If I don't wring my petticoat out, I'll catch something."

"Why, Cousin Aurelia!" Charles blurted. "In front of the captain?"

"And why not?" she demanded. "I have undies on, don't I?"

The captain broke in, his voice urgent. "We've got to get these characters back aboard in a hurry! They can't live on Sugar Plum; they're the wrong kind of people. I started to tell you. They're allergic to the critters, the trees, the natives—to everything here. You, Steward!" He beckoned. "Call the crew of the *Beautiful Joe*."

The robot ran to the ship. It whistled. Immediately, four other robots appeared.

"Bosun," said the captain to the one in the lead, "Captain Possett is ill. He is— er— delirious. The mate, too. Carry them in. And take off quickly for New Texas."

"Aye, aye, sir." The bosun saluted.

They lifted up Possett, who was grunting and swearing. They hoisted the weasel-faced mate. The hatches clanged shut. Fire burst from the stern. The ship lifted.

When there was quiet again, Cousin Aurelia looked at the captain. She examined him carefully.

"Hm-m-m," she murmured to Betty. "Not bad. Not bad at all!"

Then, "Alexander Burgee," she declared, "every bit of this is your fault. If I hadn't escaped from that man and jumped in the pool—well, I don't know *what* might've happened. The least you can do is carry me back to your house."

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AT midnight, Charles and Betty sat in the living room. They hadn't had time to get used to the change in Cousin Aurelia and they still looked at her unbelievingly. She was wearing a gay housecoat of Betty's, too tight in just the right places. She had let down her hair, tied it with a ribbon, and she'd put on a gay smear of lipstick. She was exceedingly merry.

"I can't imagine how I stood it," she was saying, "for so many years. I mean, being such an old frump." She laughed brightly. "Why, I was almost as bad as poor Charlie!"

"Well, at least I never locked myself in to get away from a pirate," Charles retorted.

The captain stood up with a chuckle. "Say, that reminds me." He went to a bookcase, opened a thick volume, and gave it to Charles. "I want you to read something here."

Charles saw that it was *Jane's Dictionary of Space Transportation*. He looked up enquiringly.

The captain was pointing at a word.

"'*Pirate,*'" Charles read, sounding puzzled. "'Pirate, originally a criminal who attacked and robbed ships at sea (see: Earth, planet) now obsolete in this sense. At present, term applied to—'" Charles hesitated—"'to persons engaged in space salvage, especially to captains of vessels employed in such work.'"

Charles turned red. Betty flushed. Cousin Aurelia started laughing her head off.

"Times change," the captain said soberly. "Do you want me to show you my license?"

The Buttons were much too embarrassed to answer.

"Well, if you don't, I hope you'll excuse us. Aurelia and I would like to sit in the swing and look at the stars for a while."

"I want to be told just how far away Boston is," she said as he helped her to rise. She wrinkled her nose. "I'm certainly glad that here on Sugar Plum we're safe from the wrong kind of people—all those horrible Victorians."

The captain's arm went around her.

He winked at the Buttons.

"A few of them weren't so bad," he said gently. "A few of the real ones."

And, as they left, he slipped the copy of *Sonnets from the Portuguese* into his pocket.

"Well, now that we've sort of lost Cousin Aurelia," said Betty, "I wish I could have one of these adorable animals on Sugar Plum for my very own. As a pet, you know. It might help as a substitute for Cousin Aurelia's company."

"And what's wrong with me for

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a substitute?" Charles wanted to know. "It seems to me that you can forget Cousin Aurelia for a change and give me a little consideration."

She looked at him appraisingly and then at her watch.

"I never thought of that," she said. "It's time for bed."

LATER, she sat up, studied him hard for a moment, and shook her head wistfully.

"Oh, Charles, you'd be perfect," she said, "if you only had lavender ears."

"That shouldn't be much trouble," he answered gravely. "I'll signal a passing spaceship, get to New Texas and have my ears tattooed. Good enough?"

She nuzzled against his neck.

"Wonderful, darling. It would make you look so — so Bohemian!"

It was the finest compliment Charles had ever received.

—R. BRETNOR

FORECAST

It's a plot . . . and what an ingenious and provocative plot! Wonderfully useful gadgets that bring terror and chaos . . . . super-salesmen to give away charity . . . . rich new frontiers no farther away than next door . . . these are the baffling ingredients of Clifford D. Simak's RING AROUND THE SUN, the exciting new serial beginning in the next issue. Maybe it's possible to wait patiently until you have all three installments before starting it. But not after you've read the first one!

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With our improved paper and printing, we really begin to head for the stars in the artwork for the novelets, short stories and features coming up.

Don't forget that Willy Ley will answer all your science questions either in FOR YOUR INFORMATION or by mail. Just hold them down to a few at a time, print clearly if you have no typewriter, and add your name and address, both of which will be withheld if you request it. *And do not apologize for your questions.* The department is written for laymen, not scientists.

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A Thought for Tomorrow

Any intolerable problem has a way out—the more impossible, the likelier it is sometimes!

By ROBERT E. GILBERT

Illustrated by DAVID STONE

LORD POTTS frowned at the rusty guard of his saber, and the metal immediately became gold-plated. Potts reined his capricious black stallion closer to the first sergeant.

"Report!" the first sergeant bellowed.

"Fourth Hussars, all present!"

"Eighth Hussars, all present!"

"Eleventh Hussars, all present!"

"Thirteenth Hussars, all present!"

"Seventeenth Lancers, all present!"

The first sergeant's arm flashed in a vibrating salute. "Sir," he said, "the brigade is formed."

Potts concentrated on the sergeant; but, aside from blue eyes, a black mustache, and luminous chevrons, the man's appearance remained vague. His uniform had no definite color, except for moments when it blushed a brilliant red, and his headgear expanded and contracted so rapidly that Potts could not be certain whether he wore a shako or a tam.

"Take your post," Potts said. "Men!" he shouted. "We're going to charge at those guns!"

"Oh, Oi say!" wailed a small private with scarcely any features but a mouth. "Them Russians'll murder us!"

"Yours not to reason why," Potts said. "Draw sabers! Charge!"

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The ground quaked under the beat of twenty-four hundred hoofs. As the first puffs of smoke billowed from the entrenchments half a league away, Potts remembered that he had forgotten to give orders to the lancers. Should he tell them to couch lances, or lower lances, or aim lances, or—

"P. T. boys, let's go. Out to the door," a bored voice called.

Potts opened his eyes. He sighed. Again he had failed. The dayroom had hardly changed. The chairs were all pushed together in the center of the floor, and two patients with brooms swept little ridges of dirt and cigarette butts toward the door. Potts sat slouched in one of the chairs and raised his feet as the sweepers passed.

"Orville Potts, out to the door," the bored voice said.

Potts gave Wilhart a killing look when the big attendant, immaculate in white duck trousers and short-sleeved linen shirt, passed through to the porch. Potts wondered why so many of the attendants resembled clean-shaven gorillas.

He arose leisurely from the chair, shuffled around the sweepers, and entered the hall. A pair of huge, gray, faded cotton pants draped his spindling legs in wrinkled folds, and an equally faded khaki shirt hung from his stooped shoulders. Potts had not combed his hair in three days. He pushed the tangled brown mass out of his eyes and threaded between the groups of men that jammed the hall, smoking and waiting to go to the shoe shop, or the paint detail, or psychodrama, or merely waiting.

At the locked door to the stairs, Potts stopped and glared at the six patients already assembled.

"Hello, Orville Potts," said another long-armed, barrel-chested attendant. This one wore a black necktie, and, so far as Potts knew, had no name but Joe. Potts ignored Joe.

The attendant pulled a ring of keys attached to a long heavy chain from his pocket and unlocked the door, when Wilhart brought the rest of the P. T. boys.

"Downstairs, when I call your name," Joe said, and read from the charts attached to his clipboard.

When his name was called, Potts stepped through to the landing and descended the top stairs. Joe locked the door.

Potts looked up at Danny Harris, who stood motionless on the landing. While Joe weaved down the crowded steps, Wilhart took Harris by the arm and pushed him.

"Let's go," he said. "Here, Orville Potts, take Danny Harris

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downstairs with you."

Potts said, "Do your own dragging."

"Well!" Wilhart gasped. "Hear that, Joe? Orville Potts is talking this morning!"

Joe turned up a red, grim face. "He'll talk a lot before I'm through with him," he promised.

The sixteen patients from Ward J descended the stairs, were counted through another door, and formed a ragged column of twos on the concrete walk outside. With Joe leading and Wilhart guarding the rear, the little formation moved across the great grassy quadrangle enclosed by the buildings and connecting roofed corridors of the hospital.

Potts tried to close his ears to Wilhart's incessant urging of Danny Harris. Harris would do little of his own volition, but Potts was tired of acting as his escort.

The blue morning sky supported but a few brilliant clouds. Potts wished he were up there, or anywhere except going to P. T. He hated P. T. It terrified him. Potts closed his eyes.

MAJOR Orville Potts stood in the soft grass and rested a gloved hand on the upper wing of his flying machine.

"Sir," he said, "with my invention, the Confederacy will soon put the Yankees to rout."

The general stroked his gray goatee and pursed his lips. Potts felt pleased that every detail of the general's uniform stood out in bold clarity. The slouch hat, gray coat, red sash, and black jackboots were more real than life. Of course the surrounding landscape was a green blur, but increased concentration would clear that.

The general said, "Ah'm doubtful, Majah. Balloons, Ah undahstand. Hot aiah natuahlly rises, but this contraption seems too heavy to fly."

"No heavier, in proportion, than a kite, sir," Potts explained.

The crude mountaineer captain, standing slightly behind the general, snickered.

"Hit won't work nohow," he predicted. "Jist like that there Williams repeatin' cannon at Seven Pines. Ain't even got no steam engine fur as I kin see."

Potts said, "This is a new type engine. It operates on a formula of my own, which I have named gasoline. Now, if you gentlemen will excuse me, I shall proceed with the demonstration."

Potts climbed into the cockpit. A touch of the starter set the 1,000 h.p. radial engine roaring. He waved to the gaping officers and opened the throttle. The biplane whisked down the field and rocketed into the blue morning sky.

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Too late, Potts saw the buzzard soaring dead ahead. He shoved the stick forward, but the black bird rushed toward his face in frightening magnification.

POTTS opened his eyes. He had walked into a wall.

"What's the matter, Orville Potts?" Joe asked. "You sleepwalking? Get in there! I'll wake you up."

Joe shoved Potts through the door marked PHYSICAL THERAPY and into the dressing room. With sixteen patients in the process of disrobing, the small room presented a scene of wild, indecent activity. Potts squirmed through the thrashing tangle to a bench against the wall. He sat down and removed a shoe.

Potts almost felt the currents surging through the neurons of his brain and sensed a throbbing on the inside of his skull. Twice this morning, he had tried to break through the physical barrier and had failed. Even with a minimum of thought, the reasons for failure became obvious.

Lack of intimate detail seemed the principle cause. In his attempt to reach the Crimean War and lead the Charge of the Light Brigade, he had been hampered by his ignorance of correct uniforms and commands. He did not know at what time of day the charge had taken place, the weather conditions, the appearance of the terrain, or even the exact date. He believed it was about 1855, but he wouldn't risk a dime bet on his guess. Perhaps an attempt to return to the past was certain to fail. Surely the past had happened, was settled, inviolate. Someone named Lord Cardigan, not Orville, Lord Potts, had led the charge.

Inventing an airplane during the Civil War also had no chance of success. No such thing actually happened, and, if it had, the plane would have been more crude than the Wright brothers' machine. Furthermore, Potts was no aviator. Success, if any, lay in the future. The future was yet to come, and Potts could mold events to his liking. Or perhaps he could move his body in space, instead of time. He could think himself out of the hospital.

"Orville Potts, get those clothes off!" Wilhart ordered. Potts slowly removed his faded garments. He took his place at the end of the line of naked men leading to the needle shower.

Joe stood in all his glory at what Potts called the P. T. machine. The apparatus was a marble box with rows of knobs and gauges and a pair of rubber hoses on the top. Potts felt sure that Joe took a sadistic delight in his work. As the line moved forward, he glanced at the attendant's

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florid face, tight smiling lips and squinted eyes. Potts shuddered.

No member of the hospital staff had ever condescended to explain to Potts the exact purpose of the P. T. bath, other than that it would make him feel good. It only frightened Potts. The correct procedure was that the patient stepped between the pipes of the needle shower and washed himself. Then the attendant turned off the shower and sluiced the patient with powerful streams of water from the hoses.

The routine seemed senseless and innocent enough, but Potts had heard whispered conversations in the night that filled him with horror. The P. T. machine, rumor said, was actually an instrument of torture and death. The water pressure could be increased to two thousand pounds, enough to push out a man's eyes or break his bones. Instead of water, the hoses could spit fire like a flamethrower. Acid could spray from the shower. Potts had even heard that Joe had killed seven men in the P. T. bath. How much of this was true, Potts did not know. When he saw bodies turn suddenly red under a rain of hot water, or writhe and tremble as if being whipped, he could believe all of it.

The line advanced slowly, like a gang of criminals going to the gas chamber. Potts grimly determined to think himself out of the hospital at once, for who knew when fire instead of water would spout from the hoses? If he recalled some place outside, in exact detail, Potts knew he could become all mind and project himself there. He must recall everything, scents, temperature, the ground beneath his feet, precise colors. Potts concentrated.

He tried to remember the home he had not seen for three months. He received a dim impression of a tiny crowded apartment and a wife growing increasingly indifferent. He could not even remember the color of her eyes, or whether the living room contained one easy chair or two. He would have to project himself to another place, one that did not seem like a vague dream.

Potts saw that his bath would come next. Danny Harris stood in the spray and stared stupidly at the tile floor. Potts looked at Joe. A wide smile that revealed two gold teeth creased the burly attendant's face. Hairy hands turned off the needle shower, twisted two more knobs, and picked up the twin hoses. Joe stood like the villain in a Western movie, blazing away with two guns, and shot thin powerful streams of water against Harris's spine. Harris shrieked, though he rarely uttered a sound outside the P. T. bath. As the icy water raked

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him from head to heels, he yelled and danced.

"Turn around," Joe commanded.

Harris pivoted and wailed, and Joe basted him on all sides with water. Potts watched fascinated as the thin body turned alternately blue with cold and red under the stinging water. He would not endure that again this morning. He knew now one place he could sense and visualize in complete detail.

"All right," said Joe, laying down his hoses. "Let's go, Orville Potts!"

Harris reeled, like a man rescued from drowning, into the dressing room, and Potts took his place between the four vertical pipes of the needle shower. From innumerable holes in the pipes, powerful jets of water spouted against his body. He stood with his back turned to the machine and made no attempt to wash. He never did—he saw no point in bathing without soap.

Potts thought of the Ward J dayroom, the room in which he had spent much of his time for the past three months. He visualized the maroon chairs with metal arms and legs, the green cretonne curtains, the cream walls, the black-and-red inlaid linoleum floor glinting with spots of old wax. He sensed a stale odor of tobacco smoke, furniture pol-

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ish, and perspiration. He heard the talk of patients engaged in perpetual games of rook. He felt his thighs, hips, and back pressing against one of the chairs, and his feet on the smooth floor.

"Now, Orville Potts," Joe jeered, "let's hear you sing like Danny Harris!"

But Potts wasn't there.

POTTS opened his eyes. He had always wondered how it would feel, but he had felt nothing. In the same instant, he stood tensed, waiting for the water, and he sat in a chair in the Ward J dayroom. Directly in front of him, a nurse played rook with three of the patients grouped around a square table. Not many patients were in the room at this hour, and no attendant stood guard. The nurse turned her head slightly. She gasped, shoved back her chair and ran to the porch. Nasen, the ward attendant, charged through the door she had used.

"Orville Potts!" he cried. "Where's your clothes?"

Potts then noticed that he was completely naked and wet.

Nasen dragged Potts from the chair, applied a light hammerlock, and marched his captive from the room. "Did you come over here from P. T. like that?" he asked. "How'd you get out?"

Potts went along willingly

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enough, but without answering.

Nasen unlocked the door to the shower room and thrust Potts within. "Stay right there," he said. As he was locked in, Potts heard the attendant call, "Frank, go tell Dr. Bean that Orville Potts slipped out of P. T. with no clothes on. I don't know how. He must have stolen a key."

Potts took a towel from the shelf, sat on the bench, and rubbed his hair with the towel. He hoped they all went batty trying to learn how he had escaped. He thought most of the attendants should be patients anyhow.

Clutching a pile of clothing and a pair of slippers, Nasen returned. "Put these on," he said. "Orville Potts, you're in trouble now. What did you do with the key?"

Potts struggled into a tight blue shirt minus most of the buttons. "I didn't have a key."

"You're *talking*?"

"I can talk when I want to," Potts admitted. "I just never want to."

Nasen said, "That's more words than I've heard from you all at one time. Why did you come back stark naked like that?"

"I thought my way out," Potts explained, pulling on the trousers that had evidently been tailored for a giant.

"Oh, you thought your way out. Put those slippers on."

Joe and Wilhart, flushed and panting, charged into the shower room.

"There he is! Grab him!" Joe yelled. He seized Potts' arms and pulled them behind in a brutal double hammerlock.

"He's not giving any trouble," Nasen said. "What happened, Joe?"

"Damn if I know. He was in the shower, and I turned my head for a second. Next thing I knew, he was gone. What'd you find on him — a key or a lock-pick or something like that?"

Nasen grinned. "He didn't have even that much on when I first saw him. He came into the day room and sat down, and Miss Davis like to threw a fit."

Wilhart tossed a bundle on the floor. "There's nothing in his own clothes but a pack of cigarettes."

"Where's the key, Orville Potts?" Joe grated, squeezing Potts's arms. "You know what's going to happen to you? You'll get the pack room, or maybe Ward D. How would you like Ward D, Orville Potts?"

Nasen said, "If he had a key, he—"

"You better run along, Nasen," Joe said. "I think Dr. Bean wants to talk to you."

"Well, I—uh—" Looking worried, Nasen left the shower room.

Wilhart handed Joe a towel.

"Leave me alone!" Potts yelled.

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Joe wrapped the towel around Potts's neck. "Where's the key, Orville Potts?"

"Help!" Potts cried. The towel tightened.

With rapidly dimming vision, he saw Wilhart assume a stance. A huge fist thudded against his shrunken stomach. He tried to scream, but the towel cut off all air and sound. Again and again, the fist struck.

Potts found himself sitting on the floor, gulping air into starved lungs. For a moment, he hoped he had managed another transportation, but the two white-clad human gorillas leering down at him proved he had not left the shower room.

"Get up," Joe said.

They dragged Potts to his feet. Nasen opened the door, clamped his teeth, and then opened his mouth to say, "Dr. Bean wants Orville Potts. I'll—"

"I'll take him," Joe said.

Potts winced as spatulate fingers almost met through his biceps. His feet barely touched the floor of the corridor when Joe marched him to the office of Dr. Lawrence D. Bean.

DR. BEAN, a thin bald man, sat behind a maple desk and peered at Potts over spectacles attached to a black ribbon. Joe shut the door and leaned against it.

"I've been hearing things about you, Orville," Dr. Bean said. "We'll have a little examination. Now, hold your right arm out straight, close your eyes, and touch the end of your nose with your index finger."

"Can't we do without the foolishness?" Potts asked. He sank into the chair beside the doctor's desk and gently rubbed his bruised arm.

The doctor looked slightly startled, but said, "I'm pleased to hear you speaking again, Orville. If you continue to talk to people, take an interest in your surroundings, write home, you'll be out of here very shortly."

"He choked me," Potts said, pointing a thumb at Joe. "He choked me with a towel, and the other one, that Wilhart, hit me in the stomach."

Dr. Bean's spectacles jumped from his nose and dangled by the ribbon. He focused a pair of bleary eyes on Potts and said, "You know they didn't, Orville. The attendants are here for your benefit. They would never subject a patient to physical violence."

Potts laughed for the first time since he was hospitalized. He said, "Why don't you ask me what I did with the key?"

"What did you do with the key, Orville?"

"Talk about monomaniacs!"

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Potts snickered. "You all have one-track minds. You can't think of any way I could have escaped without stealing a key. Is any key actually missing? Did anyone see me crossing the grass or coming through the halls? I'll tell you how I did it. Exactly how. You already think I'm nuts, so it won't matter."

Again, Potts pointed at Joe. "Laughing boy here can bear me out. He was about to whip me with his ice water, and I vanished. I vanished from the shower and materialized in the dayroom."

Dr. Bean replaced his glasses and grabbed a pad and pencil.

"That's right, Doc," Potts approved. "Write it down. I'm giving you a better break than you ever gave me. I've been in this hospital four times, and no doctor ever sat down and explained what was wrong with me, or tried to learn why. There was something about combat fatigue, whatever that is, over in Italy. Otherwise, I don't know anything. If I so much as raise my voice or break a dish at home, my wife has me shipped back here as dangerously psychotic, or psycho-neurotic, or s o m e t h i n g. Which makes it nice for her.

"And what do you do when I come back? You give me electric shock treatments and have your sadists whip me with P. T. baths, as if torture could cure a sick mind! Maybe there's nothing wrong with my brain. Maybe it's just different from yours, or this jerk's, if he has a brain."

"Never mind, Joe," Dr. Bean cautioned in a theatrical aside. "Just stand by."

Potts smiled and said, "Take it all down. Then you can check your notes and decide if it's schizophrenia, or catatonia, or psychasthenia, or what not. I know a little about mental diseases from reading, and I'll explain my theory the best I can."

POTTS tapped his forehead with a forefinger and asked, "What is a brain? You'll say it's an organ occupying the skull and forming the center of the nervous system, and the seat of intellect, or some such thing. I don't think so. It generates electricity. You know that. A nerve impulse is a wave of electricity started and conducted by a nerve cell. You can test it. You've made brain-wave patterns of some of the boys in the ward.

"The brain transforms energy into thought, or thought into energy. I'm sitting here thinking and not moving my body at all. My brain is transforming electric energy into thought. You're writing, and your thoughts guide the movement of your hand. Thought into energy."

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Dr. Bean turned a page and continued to scribble rapidly. Potts heard Joe move and felt the big attendant's presence behind his chair.

Potts said, "The ability to think improves with use, like a muscle growing stronger with use. The first time you memorize a poem, it's a hard job. If you keep on memorizing, it becomes easier, until you read a poem a couple of times and you have it. The same goes for remembering. I'll bet you can't even remember how your breakfast tasted and smelled this morning. Probably not even what you ate.

"I practice remembering with all the senses. How things look and taste and smell. Exact colors, shadows, size, impressions. Think of an airplane, and you probably think of a little silver thing in the sky. Actually, an airplane is much bigger than that, so your mental picture of an airplane is all wrong. An airplane gives me a certain impression. I have it only when looking at one. Maybe it's an unrecognized sense. I have an entirely different impression when I'm looking at a horse."

Dr. Bean threw down his pencil, caught his falling glasses, drew a handkerchief from his breast pocket, and polished them.

"Too deep for you, Doc?" Potts inquired. "Well, just assume that my brain is a more powerful generator and transformer than any you ever saw. I've developed it by memorizing, remembering, visualizing, working problems in my head, and so on. I've been trying to make my brain take complete control of my body. The body is composed of atoms, and the atoms are electrical charges, protons and electrons. Therefore, you're nothing but electricity in the shape of a man.

"By changing myself to pure thought, or pure electricity, I believed that I could escape to the past. Get away from this age where a man is suspected of insanity if he so much as mislays his checkbook or kicks his dog. People didn't used to be crazy unless they went around hacking their relatives with an ax.

"I tried to meet Columbus when he rowed ashore from the *Santa Maria*. I tried to watch the Battle of Bunker Hill. I tried to lead the Charge of the Light Brigade. I tried to invent an airplane during the Civil War. I always failed, because I didn't have enough sensory knowledge of the period, and I couldn't change the past.

"I succeeded in P. T. because I transported myself through space instead of time. I knew every detail of the day room, so it worked. My brain reduced my body to its elemental charges in the P. T. bath and reassembled it in the

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dayroom. Something like radio, with the brain acting as sending set and receiver. Maybe we should call it philosophy, Doc. What is reality? If I sit here in your office but imagine I'm sitting in the dayroom, until the chair in the dayroom becomes more real than this, where am I actually sitting?"

Dr. Bean stood up, adjusted his glasses, and said, "Orville, I am going to do as you asked. I am going to tell you exactly what is wrong with you. You are suffering from distorted perception — illusions and hallucinations, disorientation. You are also becoming an exhibitionist and are developing a persecution complex. I thought, when you first came in, that you had improved. But if you don't pull yourself together and try to get well, you'll be in here a long time."

Potts's chair overturned as he thrust himself up. He placed his thin hands on the desk and said, "You psychiatrists can't see an inch in front of your nose! All you can do is quote a textbook. If anybody mentions mental telepathy, or predicting the future, or a sense of perception, you classify them as insane. You think you've reduced the mind to a set of rules, but you're still in kindergarten! I'll prove every word I said! I'll vanish into the future! I can't change the past, but the future hasn't happened yet! I can imagine my own!"

Joe grabbed the fist that Potts shook under the doctor's nose and pinned the patient's arms behind his back.

"Take him upstairs to Ward K, Joe," Dr. Bean said. "To the pack room. That should calm him."

"So long, moron!" Potts called.

"Let's go, Orville Potts," Joe said. "We're going to fix you up just like an ice cream soda."

"You won't pack me in ice," Potts promised. His thin body twisted in pain.

He closed his eyes tight and concentrated.

Joe's great hands clamped into fists when Potts disappeared.

POTTS opened his eyes. He lay face down on a padded acceleration couch with broad straps across his brawny back and legs. Before his face, a second hand swept around a clock toward a red zero. Potts twisted his head slightly in the harness and looked at the beautiful young woman strapped to the couch on his right. A shrieking warning siren blared through the spaceship.

The woman smiled.

"Hia, ked," she said in strange new accents. "Secure your dentures. Next stop, Alpha Centaurus!"

—ROBERT E. GILBERT

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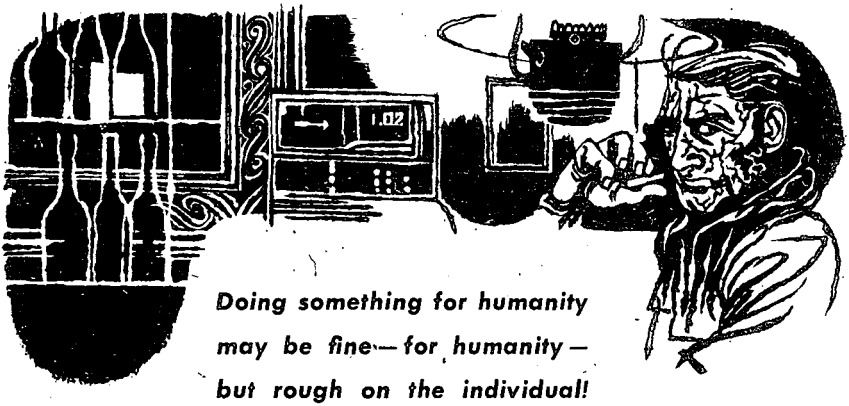
The Altar at Midnight

By C. M. KORNBLUTH



Doing something for humanity may be fine—for humanity—but rough on the individual!

HE had quite a rum-blossom on him for a kid, I thought at first. But when he moved closer to the light by the cash register to ask the bartender for a match or something, I saw it wasn't that. Not just the nose. Broken veins on his cheeks, too, and the funny eyes. He must have seen me look, because he slid back away from the light.

The bartender shook my bottle of ale in front of me like a Swiss bell-ringer so it foamed inside the green glass.

"You ready for another, sir?" he asked.

Illustrated by ASHMAN

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I shook my head. Down the bar, he tried it on the kid—he was drinking scotch and water or something like that—and found out he could push him around. He sold him three scotch and waters in ten minutes.

When he tried for number four, the kid had his courage up and said, "I'll tell *you* when I'm ready for another, Jack." But there wasn't any trouble.

It was almost nine and the place began to fill up. The manager, a real hood type, stationed himself by the door to screen out the high-school kids and give the big hello to conventioneers. The girls came hurrying in, too, with their little makeup cases and their fancy hair piled up and their frozen faces with the perfect mouths drawn on them. One of them stopped to say something to the manager, some excuse about something, and he said: "That's aw ri'; get inna dressing room."

A three piece band behind the drapes at the back of the stage began to make warmup noises and there were two bartenders keeping busy. Mostly it was beer—a midweek crowd. I finished my ale and had to wait a couple of minutes before I could get another bottle. The bar filled up from the end near the stage because all the customers wanted a good, close look at the strippers for their fifty-cent bottles of beer. But I noticed that nobody sat down next to the kid, or, if anybody did, he didn't stay long—you go out for some fun and the bartender pushes you around and nobody wants to sit next to you. I picked up my bottle and glass and went down on the stool to his left.

He turned to me right away and said: "What kind of a place is this, anyway?" The broken veins were all over his face, little ones, but so many, so close, that they made his face look something like marbled rubber. The funny look in his eyes was it—the trick contact lenses. But I tried not to stare and not to look away.

"It's okay," I said. "It's a good show if you don't mind a lot of noise from—"

He stuck a cigarette into his mouth and poked the pack at me. "I'm a spacer," he said, interrupting.

I took one of his cigarettes and said: "Oh."

He snapped a lighter for the cigarettes and said: "Venus."

I WAS noticing that his pack of cigarettes on the bar had some kind of yellow sticker instead of the blue tax stamp.

"Ain't that a crock?" he asked. "You can't smoke and they give you lighters for a souvenir. But it's a good lighter. On Mars last

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week, they gave us all some cheap pen-and-pencil sets."

"You get something every trip, hah?" I took a good, long drink of ale and he finished his scotch and water.

"Shoot. You call a trip a 'shoot'."

One of the girls was working her way down the bar. She was going to slide onto the empty stool at his right and give him the business, but she looked at him first and decided not to. She curled around me and asked if I'd buy her a li'l ole drink. I said no and she moved on to the next. I could kind of feel the young fellow quivering. When I looked at him, he stood up. I followed him out of the dump. The manager grinned without thinking and said, "G'night, boys," to us.

The kid stopped in the street and said to me: "You don't have to follow me around, Pappy." He sounded like one wrong word and I would get socked in the teeth.

"Take it easy. I know a place where they won't spit in your eye."

He pulled himself together and made a joke of it. "This I have to see," he said. "Near here?"

"A few blocks."

We started walking. It was a nice night.

"I don't know this city at all," he said. "I'm from Covington, Kentucky. You do your drinking at home there. We don't have places like this." He meant the whole Skid Row area.

"It's not so bad," I said. "I spend a lot of time here."

"Is that a fact? I mean, down home a man your age would likely have a wife and children."

"I do. The hell with them."

He laughed like a real youngster and I figured he couldn't even be twenty-five. He didn't have any trouble with the broken curbstones in spite of his scotch and waters. I asked him about it.

"Sense of balance," he said. "You have to be tops for balance to be a spacer—you spend so much time outside in a suit. People don't know how much. Punctures. And you aren't worth a damn if you lose your point."

"What's that mean?"

"Oh. Well, it's hard to describe. When you're outside and you lose your point, it means you're all mixed up, you don't know which way the can—that's the ship—which way the can is. It's having all that room around you. But if you have a good balance, you feel a little tugging to the ship, or maybe you just *know* which way the ship is without feeling it. Then you have your point and you can get the work done."

"There must be a lot that's hard to describe."

He thought that might be a crack and he clammed up on me.

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"You call this Gandytown," I said after a while. "It's where the stove-up old railroad men hang out. This is the place."

IT was the second week of the month, before everybody's pension check was all gone. Oswiak's was jumping. The Grandsons of the Pioneers were on the juke singing the *Man from Mars Yodel* and old Paddy Shea was jigging in the middle of the floor. He had a full seidel of beer in his right hand and his empty left sleeve was flapping.

The kid balked at the screen door. "Too damn bright," he said.

I shrugged and went on in and he followed. We sat down at a table. At Oswiak's you can drink at the bar if you want to, but none of the regulars do.

Paddy jigged over and said: "Welcome home, Doc." He's a Liverpool Irishman; they talk like Scots, some say, but they sound almost like Brooklyn to me.

"Hello, Paddy. I brought somebody uglier than you. Now what do you say?"

Paddy jigged around the kid in a half-circle with his sleeve flapping and then flopped into a chair when the record stopped. He took a big drink from the seidel and said: "Can he do this?" Paddy stretched his face into an awful grin that showed his teeth. He has three of them. The kid laughed and asked me: "What the hell did you drag me into here for?"

"Paddy says he'll buy drinks for the house the day anybody uglier than he is comes in."

Oswiak's wife waddled over for the order and the kid asked us what we'd have. I figured I could start drinking, so it was three double scotches.

After the second round, Paddy started blowing about how they took his arm off without any anesthetics except a bottle of gin because the red-ball freight he was tangled up in couldn't wait.

That brought some of the other old gimps over to the table with their stories.

Blackie Bauer had been sitting in a boxcar with his legs sticking through the door when the train started with a jerk. Wham, the door closed. Everybody laughed at Blackie for being that dumb in the first place, and he got mad.

Sam Fireman has palsy. This week he was claiming he used to be a watchmaker before he began to shake. The week before, he'd said he was a brain surgeon. A woman I didn't know, a real old Boxcar Bertha, dragged herself over and began some kind of story about how her sister married a Greek, but she passed out before we found out what happened.

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Somebody wanted to know what was wrong with the kid's face—Bauer, I think it was, after he came back to the table.

"Compression and decompression," the kid said. "You're all the time climbing into your suit and out of your suit. Inboard air's thin to start with. You get a few redlines—that's these ruptured blood vessels—and you say the hell with the money; all you'll make is just one more trip. But, God, it's a lot of money for anybody my age! You keep saying that until you can't be anything but a spacer. The eyes are hard-radiation scars."

"You like dot all ofer?" asked Oswiak's wife politely.

"All over, ma'am," the kid told her in a miserable voice. "But I'm going to quit before I get a Bowman Head."

"I don't care," said Maggie Rorty. "I think he's cute."

"Compared with—" Paddy began, but I kicked him under the table.

WE sang for a while, and then we told gags and recited limericks for a while, and I noticed that the kid and Maggie had wandered into the back room—the one with the latch on the door.

Oswiak's wife asked me, very puzzled: "Doc, w'y dey do dot flyink by planyets?"

"It's the damn govermint," Sam Fireman said.

"Why not?" I said. "They got the Bowman Drive, why the hell shouldn't they use it? Serves 'em right." I had a double scotch and added: "Twenty years of it and the found out a few things they didn't know. Redlines are only one of them. Twenty years more, maybe they'll find out a few more things they didn't know. Maybe by the time there's a bathtub in every American home and an alcoholism clinic in every American town, they'll find out a whole *lot* of things they didn't know. And every American boy will be a pop-eyed, blood-raddled wreck, like our friend here, from riding the Bowman Drive."

"It's the damn govermint," Sam Fireman repeated.

"And what the hell did you mean by that remark about alcoholism?" Paddy said, real sore. "Personally, I can take it or leave it alone."

So we got to talking about that and everybody there turned out to be people who could take it or leave it alone.

IT was maybe midnight when the kid showed at the table again, looking kind of dazed. I was drunker than I ought to be by midnight, so I said I was going for a walk. He tagged along and we wound up on a bench at

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Screwball Square. The soap-boxers were still going strong. Like I said, it was a nice night. After a while, a pot-bellied old auntie who didn't give a damn about the face sat down and tried to talk the kid into going to see some etchings. The kid didn't get it and I led him over to hear the soap-boxers before there was trouble.

One of the orators was a mush-mouthed evangelist. "And oh, my friends," he said, "when I looked through the porthole of the spaceship and beheld the wonder of the Firmament—"

"You're a stinkin' Yankee liar!" the kid yelled at him. "You say one damn more word about can-shootin' and I'll ram your spaceship down your lyin' throat! Wheah's your redlines if you're such a hot spacer?"

The crowd didn't know what he was talking about, but "wheah's your redlines" sounded good to them, so they heckled mush-mouth off his box with it.

I got the kid to a bench. The liquor was working in him all of a sudden. He simmered down after a while and asked: "Doc, should I've given Miz Rorty some money? I asked her afterward and she said she'd admire to have something to remember me by, so I gave her my lighter. She seem' to be real pleased with it. But I was wondering if maybe I embarrassed her by asking her right out. Like I tol' you, back in Covington, Kentucky, we don't have places like that. Or maybe we did and I just didn't know about them. But what do you think I should've done about Miz Rorty?"

"Just what you did," I told him. "If they want money, they ask you for it first. Where you staying?"

"Y. M. C. A.," he said, almost asleep. "Back in Covington, Kentucky, I was a member of the Y and I kept up my membership. They have to let me in because I'm a member. Spacers have all kinds of trouble, Doc. Woman trouble. Hotel trouble. Fam'ly trouble. Religious trouble. I was raised a Southern Baptist, but wheah's Heaven, anyway? I ask' Doctor Chitwood las' time home before the redlines got so thick—Doc, you aren't a minister of the Gospel, are you? I hope I di'n' say anything to offend you."

"No offense, son," I said. "No offense."

I walked him to the avenue and waited for a fleet cab. It was almost five minutes. The independents that roll drunks dent the fenders of fleet cabs if they show up in Skid Row and then the fleet drivers have to make reports on their own time to the company. It keeps them away. But I got one and dumped the kid in.

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"The Y Hotel," I told the driver. "Here's five. Help him in when you get there."

WHEN I walked through Screwball Square again, some college kids were yelling "wheah's your redlines" at old Charlie, the last of the Wobblies.

Old Charlie kept roaring: "The hell with your breadlines! I'm talking about atomic bombs. *Right—up—there!*" And he pointed at the Moon.

It was a nice night, but the liquor was dying in me.

There was a joint around the corner, so I went in and had a drink to carry me to the club; I had a bottle there. I got into the first cab that came.

"Athletic Club," I said.

"Inna dawghouse, harh?" the driver said, and he gave me a big personality smile.

I didn't say anything and he started the car.

He was right, of course. I was in everybody's doghouse. Some day I'd scare hell out of Tom and Lise by going home and showing them what their daddy looked like.

Down at the Institute, I was in the doghouse.

"Oh, dear," everybody at the Institute said to everybody, "I'm sure I don't know what ails the man. A lovely wife and two lovely grown children and she had to tell him 'either you go or I go.' And *drinking!* And this is rather subtle, but it's a well-known fact that neurotics seek out low company to compensate for their guilt-feelings. The *places* he frequents. Doctor Francis Bowman, the man who made space-flight a reality. The man who put the Bomb Base on the Moon! Really, I'm sure I don't know what ails him."

The hell with them all.

—C. M. KORNBLUTH

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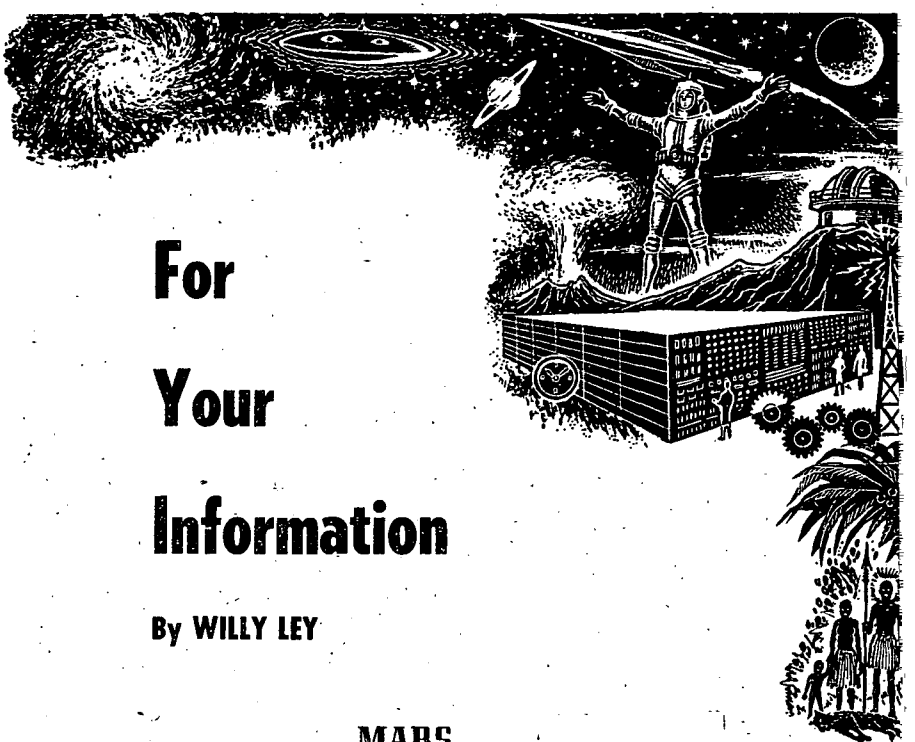

For Your Information

By WILLY LEY

MARS

EVERY couple of years I see to it that I am where there is a reasonably large telescope, because every two years and two months Earth and Mars are on the same side of their orbits around the Sun. Since the orbit of Mars has a rather pronounced ellipticity, not all of these approaches are uniformly good. The closest Mars came to us in 1952 (on May 8th) was 51,860,000 miles. The next approach in 1954 will be some-

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what better, and the one after that, in 1956, will be almost the minimum possible, which is 35 million miles.

As you can easily guess from the first sentence, I make sure that I have a look at Mars on those occasions. And since I know what to expect, I was disappointed only the first time, quite a number of years ago.

The man who goes to an astronomical observatory on visitor's night usually has read a few books on astronomical subjects and has seen some pictures. Now he is going to check the pictures with reality and in general he sees what he expects to see. There is bright-glowing Venus, showing phases like the Moon's. There are the mountains and craters and dark *maria* of the Moon, just as described in the books. There is Saturn with its rings, incredible but sharp and clear in the dark sky. And there is Jupiter with its stripes and several of its large moons almost militarily lined up. But when it comes to Mars, the visitor is almost always disappointed. He expected to see—well, reddish deserts and gray-green areas of vegetation. He was hoping for one of the famous "oases," preferably *Lacus solis,* and maybe a canal or two.

What he actually sees, even with a hundred magnifications, is something slightly smaller than the Moon appears to the naked eye. Mars looks like a brightly illuminated orange about a block away. When there is a polar cap, you can make it out quite easily. And if you are lucky, you can also see the main marking, the dark triangle of *Syrtis major.* After having a look at Mars yourself, at close approach and with a fairly large instrument, you no longer wonder why astronomers cannot answer so many of the layman's questions. On the contrary, the wonder is how they managed to learn as much as they have.

LET'S run quickly through the facts agreed upon by everybody. The dark areas called "seas" are not seas, but sections covered with vegetation which shows very pronounced seasonal changes in coloring. Most astronomers say that this vegetation probably corresponds to terrestrial lichens, but this statement mostly means that terrestrial lichens could probably survive on Mars. What shape the Martian plants took via a hundred million years of local evolution is something we'll have to see in order to be certain.

Another point on which there is general agreement now is the nature of the polar caps. They are true ice (not "dry ice" as was suspected by a few for some

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time) and very thin, probably just a few inches on the average. It is also agreed that the canals do exist, although nobody knows what they are. Dr. Clyde Tombaugh, the discoverer of Pluto, advanced the guess that the so-called "oases" are large impact craters, caused by arrivals from the Asteroid Belt, and that the "canals" are cracks formed by those impacts.

As for the deserts, Prof. Henry Norris Russell suggested a number of years ago that they are red because they are iron oxides, which would also explain the lack of oxygen in the Martian atmosphere. Dr. Tombaugh did not agree with this view and thought that the sands of the Martian deserts were red because they had been pulverized from normally red rocks. But most recent observations by French astronomers agree with Prof. Russell—the Martian deserts polarize light in the same manner as limonite. Limonite is the name of a terrestrial iron ore, chemically almost the same as rust.

As regards the atmosphere of Mars, some conclusions were published recently by Gerard de Vaucouleurs, who is at present working in Australia. Nobody can say that de Vaucouleurs is very optimistic about Mars, which he calls: "A desert, moved to the arctic and lifted to stratospheric heights." The composition of that thin atmosphere, according to de Vaucouleurs, is 98.5 per cent nitrogen and about 1.3 per cent argon, which leaves only very little room for oxygen and other gases.

That this should be the last word on the Martian atmosphere is at least doubtful. It certainly cannot be the composition near the ground.

In the first place, the areas now generally accepted as vegetation must produce *some* oxygen. I have to mention at this point that it is assumed that the Martian vegetation does not require liquid water, but can utilize water vapor in the atmosphere. This assumption is quite reasonable, for some terrestrial plants can do it, too. A few years ago, the Russian astronomer Tikhov reported the discovery of a tree with that characteristic from the highlands of Inner Asia; in fact, Tikhov referred to it as *Marsianka* ("little Martian"). Quite recently it was discovered that we have a similar tree on the West Coast.

But if we assume occasional water vapor in the Martian atmosphere (for the sake of the plants), then something discovered in our own atmosphere must also take place on Mars. Dr. Joseph Kaplan has offered the

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theory that solar radiation takes water vapor apart, splitting it into oxygen and hydrogen. The hydrogen escapes, but the oxygen remains in the form of separate atoms, as long as the Sun is shining. After sunset, the atoms of oxygen combine into oxygen molecules with some release of energy, which accounts for the sky glow. In our atmosphere, this takes place at a considerable height, around 60 miles. In the Martian atmosphere, the same process should take place nearer the ground.

Well, we'll indubitably find out one day, but not by making our observations from Earth.

THE BUMBLEBEE BUGLER

THE bumblebee, *Bombus terrestris*—everything that follows is also true of the related *Bombus ruderatus*—builds its nest on and often even in the ground. Neither the architectural arrangement nor the workmanship compares with that of the honeybee, but the general idea is the same. Nor are there as many inhabitants in a bumblebee nest; the maximum number seems to be about 450.

But in spite of lesser numbers and poorer housing, the bumblebee seemed to be able to boast something that the honeybee did not have. An otherwise long forgotten naturalist by the name of Goedard told the story for the first time in 1685.

Old Goedard, who either suffered from insomnia or had the reprehensible habit of getting up at 3 A.M., reported that he came across a bumblebee nest at that early hour, when the sky was already bright, but all of Nature that he could see was still asleep, including the bumblebees.

As he watched, an especially fat bumblebee climbed out of the nest. It took its position near the hole from which it had emerged and began to beat its wings. But to Goedard's surprise, instead of taking off, it just sat there, humming loud and furiously. This went on for ten minutes, fifteen minutes. Other bumblebees crawled sleepily out of the nest and reluctantly began the day's work. But the first one kept humming for another fifteen minutes until the whole family was awake. Then it disappeared.

The bumblebees, Goedard announced, have a bugler like a military garrison—an individual with the duty of waking up the others so that they will not oversleep and waste some of the new day the Lord hath made.

Others read this and accepted it as one more example of the miraculous organization of tiny insects. A little later some authors became cautious about it

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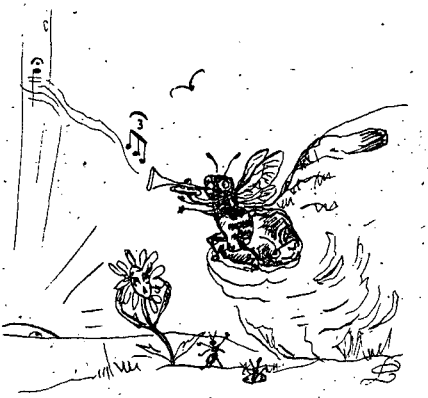
and, still later, the story was repeated with an amused and somewhat superior smile, as a typical fairy tale from the early days of natural history.

But then, almost 200 years after Goedard, came Professor Hoffer of Graz in Austria and said: "Yes, its true, the bumblebees do have a bugler." He had seen it himself because in his garden there was a nest of *Bombus ruderatus*.



The day of the year when he noticed it first was the 7th of July. The bugler began making noise at 3:30 A.M. and kept it up until about 4:15 A.M. This went on every day—Prof. Hoffer called the members of his family, colleagues and even the local policeman as witnesses—until the 25th of July. On that day Hoffer caught the bugler to see whether it differed in any way from any of the others. Next day a new bugler was on duty.

For almost half a century, the bumblebee bugler was back in good graces (and in natural history textbooks) until Dr. von Buttel-Reepen re-opened the case. He did not say that it wasn't so. The facts were clear and, moreover, von Buttel-Reepen had observed it himself many a time. What he doubted was the explanation, in spite of all analogies with alarm clocks, military procedure and crowing roosters.

The bumblebee nest, he said, is in the ground, or close to it. It is moist. The insects themselves have collected their version of honey which thickens by evaporating surplus water. In short, the air must be awful in the morning and even if bumblebees don't mind bad smells, the moisture content must be too high for their purposes.

Now the same thing happens in bee hives where much larger quantities of honey are thickening. The bees have found out that they can do something about it: They form long chains from the entrance to the honeycombs and sit there, fanning the air with their wings, getting the moisture out of their hive. Since the bumblebee colony is so much smaller, a single individual can do it.

Simple tests showed that the solitary bugler actually causes a ventilating wind. The new inter-

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pretation was accepted by other entomologists without delay. It had been one of those cases where the by-product is mistaken for the purpose. Some electric fans make a lot of noise, but only incidentally.

HOT WATER ICE CUBES

MY casual mention about the latent heat of water and the inadvisability of overworking your refrigerator with hot water in the trays has caused some "hot" mail plus a heated phone conversation. Mrs. Carr of the National Fantasy Fan Federation in Seattle, Washington, wrote some harsh words: "An excellent example of a certain type of so-called 'scientific' thinking which brands as 'superstition' any fact it cannot explain in its own pompous and shortsighted terms."

Now let's all calm down and review what I said. I did not claim that I had made the experiment, or even checked it. I stated that somebody in the Bureau of Standards had done so and told me about it. I also said that cold water has less heat for the refrigerator to carry away. Well, it has! As for the discussion itself, I'll quote from a letter by Mr. Paul D. Hobson of 220 Research Road in Ottawa, Ontario, Canada. He wrote me:

"Some time ago I was asked the same question and carried out experiments. I found that a dry clean ice tray on a dry clean shelf gave the expected result, as found by the Bureau of Standards. If, however, the shelf was covered with a layer of frost, as is usually the case with a domestic refrigerator, a tray containing initially warm water would freeze appreciably more quickly than a tray of cold water. The reason seems to be that the warm tray melts the frost and settles into contact with the metal of the freezer shelf before the moisture freezes up again, so that there is an improved conductive heat flow between the tray and the freezer unit.

"If the freezer is badly in need of defrosting, the saving in time can be as much as five minutes. Further experiments have shown that even faster freezing can be obtained by using cold water in a clean tray and freezer shelf, free of all frost, and wetting the outside of the freezer tray so that it is 'glued' to the shelf by a thin film of ice. This last result is confirmed by statements in some refrigerator manufacturers' handbooks."

And that, I hope, is that. You can't expect the Bureau of Standards, or anybody else, to enter poor maintenance as a factor in its research.

—WILLY LEY

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ANY QUESTIONS?

I have heard of a device that is supposed to reproduce long-dead sound vibrations from the atmosphere. It is said to work on the principle that sound never dies, but continues to agitate the air molecules.

Willard C. Reed,
R.F.D. No. 4
Camden, Tenn.

The inventor of this device was an author in a story in which the Sermon on the Mount was reproduced, leading not to clarication, but to endless discussions about the precise meaning of this or that Aramaic word. Actually, such a device is impossible because sound does die and very quickly too.

Supposing you yell, "boom!" This means that you expend a certain amount of energy causing spherical waves traveling outward from your mouth and expanding. As they expand, their surfaces increase rapidly, but there is only the original energy you put in. Therefore a given amount of energy is spread over a larger and larger surface. After a very short time, the energy per air molecule in that expanding sphere becomes less than that of the random motion of the air molecules.

At that instant, the sound is dead and its reassembly is as impossible as the reassembly of the ashes of a cremated body sprinkled over the ocean twenty years ago.

Explain the words positron and proton and give the difference, if any.

Dick Clarkson,
410 Kensington Rd.
Baltimore 29, Md.

Both are particles composing atoms. As you know, there are essentially two kinds of sub-atomic particles, light ones and heavy ones, the heavy ones having about 1840 times the mass of the light ones. The heavy ones are the *proton* (which carries a positive electric charge) and the *neutron* (about the same mass as the proton, but without electric charge). A third heavy one, the *negatron* (same mass as the proton, though carrying a negative electric charge) is assumed by some, but so far has not been discovered. The light ones are the *electron* (with one negative charge), the *positron* (with one positive charge) and the *neutrino*, assumed to have the same mass as the electron, but no charge.

The neutrino is, by definition undetectable and has, therefore, not been actually detected; it has been found

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necessary to assume its existence to balance equations.

In between the light and the heavy sub-atomic particles, there is a whole slew of *mesons* of different weights (up to 800 electron masses) and exceedingly short lifetimes. One explanation of the mesons is that they are temporary swirls of a bunch of electrons; in ten years or so, we may know more about them.

Since the nucleus of the normal hydrogen atom is a single proton, protons are often referred to as "hydrogen nuclei." Heavy hydrogen has a nucleus composed of one proton and one neutron, the nucleus as a whole being called a *deuteron.*

The nucleus of the very rare form of hydrogen which consists of one proton and two neutrons is called a *triton,* since that isotope of hydrogen is called tritium. The nucleus of helium of mass 3 (same mass as a triton) consists of two protons and one neutron and, since the He-3 isotope is called tralphium, is a tralpha particle. The reason why this form was chosen—one could have called it "tralphon"—is that the nucleus of the abundant helium isotope He-4, consisting of two protons and two neutrons, has been known for many years under the name of "alpha particle."

If I stopped here, I would get letters asking why an alpha particle is called an alpha particle, so I might as well add that now. The most frequent phenomenon in natural radioactivity is the release of a helium nucleus, accompanied by radiation. In order to give a graphic example of what happens, one of the early researchers (I believe it was the late Lord Rutherford of Nelson) compared it with the firing of a gun. Most important is the heavy projectile, the alpha particle. Then there is some smoke, tenuous but still material, the beta radiation (electrons), and then there is the flash, not material, the gamma radiation.

There are two theories regarding the red shift of extragalactic nebulae: one being that the red end of the spectrum is displaced because of the Galaxy's radial velocity, and the other that the light has actually become tired on its journey through space. In your opinion, which one of these two theories is more logical and why?

Gary Motley,
24 Crane Avenue,
West Caldwell, N. J.

Before I state my personal

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opinion, it might be useful to explain what this question is about to those not too conversant with the term "red shift."

Everybody knows that visible light comes in an assortment of wave-lengths. Violet rays have the shortest wave-length that still makes an impression on our eyes. Then comes blue, then green and, through yellow and orange, we arrive at red, which has the longest wave-length that we can still see.

In that spectrum, from violet to red, there are lines which can be used as reference points. If they appear shifted toward the red end of the spectrum, it means that the body which emits the light is moving away from us. If the body were moving toward us, the lines would be displaced in the direction of the violet end.

There are thousands of "extragalactic nebulae" (other galaxies) that we can see, and they all display a pronounced red shift. When the amount of red shift was measured, it turned out that it was larger as the separating distance grew longer. In other words, the ones which are farthest away are also running from us most rapidly. The ones nearer us are also running away, but not so fast.

The whole picture is what would result if the Universe as a whole were expanding and it has, indeed, led to that concept.

But if we make the assumption that light waves, after traveling thousands of years, gradually "tire" and "stretch," a red shift would be the result, too, and it would also be proportional to the distance.

Now, some of the other galaxies which are quite near, as galactic distance go, show movements other than recession from us. Some are even approaching. This is explained by Gamow and others as a random motion which, for these objects, happens to be directed against the motion that would result from universal expansion. But you may also say that these galaxies are close enough to permit us to measure their true movements, since their light has not traveled long enough to become "tired."

Nobody can say at this point which explanation is true. But I was brought up on the advice that, if you have two alternate explanations for the same set of observed facts, the simpler one is likely to be correct. Personally, I find it far easier to believe that light waves are not indestructible and that the red shift is the result of distance traveled rather than of movements proportional to distance.

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the Misogynist

by JAMES E. GUNN

A woman who sees no humor in this story is—hm, would she be likely to read it at all?

HARRY is a wit. Someone has defined a wit as a person who can tell a funny story without cracking a smile. That's Harry.

"You know," Steve said at the office one day, "I'll bet Harry will walk right up to the flaming gates of Hell, keeping the Devil in stitches all the time, and never change expression."

That's the kind of fellow Harry is. A great guy to have around the office. Makes you laugh just to see him, thinking about the last story he told. Smart, too. Keeps at a thing, digging away, piling up facts and stuff until

Illustrated by KARL ROGERS

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you finally see something straight for the first time. Everybody says he's going places.

But the kind of story Harry likes—he likes them long. They start kind of slow, you know, and sort of build up with a tickle here and a tickle there until each new touch makes you helpless, you're so weak with laughter. The kind of story you take home to your wife and you get part way through, laughing like a fool, and you notice she's just sitting there, sort of patient and martyred, thinking maybe about tomorrow's dinner or the dress sale downtown, and you stop laughing and sigh and say, "It must be the way he tells it" or "Nobody can tell stories like Harry."

But then women don't think Harry's funny.

Take the other night, for instance. Harry and I were sitting in his living room while the women—Lucille and Jane—were out in the kitchen, whipping up something after the last rubber, and Harry started this story. Only at first I didn't know it was a story.

"Did you ever stop to think," Harry said, "about what strange creatures women really are? The way they change, I mean, after you marry them. You know, they stop hanging on your words, they stop catering to your likes and dislikes, they stop laughing at your jokes."

I have a minor reputation as a humorist myself—oh, nothing in Harry's class, but ready with quip or pun, if you know what I mean. I came in with a laugh and said, "So the honeymoon is over," Harry and Lucille being married only a month or so.

"Yes," said Harry seriously. "Yes, I guess you could say that. The honeymoon is over."

"Tough," I said, feeling sorry for the guy. "The girl you marry and the woman you're married to are two different people."

"Oh, no," Harry disagreed, shaking his head. "They're not. That's just the point."

"The point?" I asked, getting an inkling that Harry's thoughtful face hid a purpose not entirely serious. "You mean there is a point?"

"Of course. It's not just a matter of superficial differences, you see. It's something fundamental. Women think differently, their methods are different, their goals are different. So different, in fact, that they are entirely incomprehensible."

"I gave up trying to understand them a long time ago."

"That's where we make our mistake," Harry said soberly. "We accept when we should try to understand. We must understand why. As the Scotch say, 'All are good lasses, but where come the ill wives?' "

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"Why?" I wanted to know, a little puzzled. "They're built differently, and not just outside. Glands, bearing children — all kinds of differences."

"That's their excuse," said Harry, sneering, "and it's not good enough. They should do best what their differences best fit them for. But their greatest career is marriage—and their greatest failure. A man to them is only the necessary evil they must have before they can get the other things they want."

"Like the black widow spider and her mate?" I suggested.

"In a way. And yet not entirely. *The spiders, at least, are of the same species.*"

I nodded over that for a moment before it soaked in. "And men and women aren't?" I practically yelled.

"Sh!" he warned, and glanced nervously at the kitchen door.

THEN was when I began to chuckle. Harry should have been in the movies. And yet I had to admire the guy, making a joke out of what is—every husband can tell you—one of the greatest and most secret tragedies of life, greater even because no one can talk about it. No one but Harry.

My chuckle must have been the right response, because he nodded, relaxed, and stopped glancing at the door out of the corner of his eye. Or maybe that was after Lucille peeked around the corner and said, "Harry off on one of his stories again? Tell us when he's through, so we can bring in the refreshments."

She was pretty light about it and you could tell it was a running joke and I couldn't help thinking what a lucky guy Harry was—if a fellow has to get married, that is, and most of us do.

"The alien race," Harry whispered and leaned back.

It was a good line and I laughed; there wasn't anything forced about it, either.

"What better way," he continued, "to conquer a race than to breed it out of existence? The Chinese learned that a long time ago. Conqueror after conqueror took the country and each one was passively accepted, allowed to intermarry . . . and eventually was absorbed. Only this case is the reverse. Conquest by marriage might be a good term for it. Breed in the conqueror, breed out the slave. Breed in the alien, breed out the human."

I nodded appreciatively. "Makes sense."

"How did it all start?" asked Harry. "And when? If I knew those answers, I'd know the whole thing. All I've got is a theory. An alien race of women landed on Earth—when man was still a

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cave-dwelling animal, maybe, or it could even have been in historic times—and my guess is they were dropped here by their men. Jettisoned. Dumped. Why? To get rid of them, obviously."

"But what did their men do then?" I had to ask, feeding him the next point.

"How do I know?" he replied irritably. "They were aliens, remember. Maybe they had some solution, some procreative substitute for women. Maybe these women were just the worst of the lot and the remaining ones were better. Maybe the men didn't give a damn and preferred racial suicide to surrender."

He angrily shoved the coffee table aside, grumbling something about women's ideas of furnishing a home, and pulled his chair closer. "Sure, surrender. They couldn't exterminate the men, could they? Who has the weapons, the military knowledge? Besides, women don't think like that. Their minds work in devious ways; they win what they want by guile and subtlety. That's why they married into the human race."

I looked blank, which is always a good way to push him on.

"Well, look," he said earnestly, just as I figured he would, "how about the Amazons? Once a year, you know, they visited the Gargareans, a neighboring tribe; any resulting male children were put to death. That didn't work very long, of course. Their purpose and their very alienness were too obvious. And the matriarchies—too blatant, you see, might give the whole thing away. Besides, men are useful in ways that women aren't. Men are inventive, artistic, creative—and can be nagged or coaxed into doing what women want them to do."

I LIT a cigarette and looked for an ashtray to put the match. He shoved over some silly little object that would suffocate a cigarette the minute you laid it down. No grooves, either, of course.

"That's what women buy when they're on their own," he pointed out disgustedly. "Lights that they think look pretty and make you blind or put a crick in your back when you try to read. You get a house with a southern exposure so you'll have sunlight, and then they put up heavy drapes to keep the furniture from fading. That's not enough, so they dress the furniture in slipcovers that always get twisted and creased. They shed bobbypins like dandruff, hang stockings over towels to dry, never screw a cap on a bottle or jar, so it always falls and breaks when you pick it up by the top, 'straighten up the house,' as they call it, by shoving every-

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thing into drawers where you never can find what you want."

I dug an uncomfortable cushion out from behind me and threw it on another chair. "All of them?" I asked. "Are they all alike?"

"I've wondered about that," he admitted, frowning. "There must be some human women left. One hears about happy marriages, although that might just be female propaganda. The women who like to read and use their minds, I'd say. Those who aren't so damned practical that they'd get up off their deathbeds to straighten a crooked picture. Women who can grasp abstract ideas. I don't think the—the aliens can." He looked up, brightening. "Those could be tests for alienness. That is," he added, frowning again, "if I'm right and there actually are any human women."

"How about those," I chipped in, "who prefer men and dislike other women?"

He thought that over seriously. "*Most* other women. It could be that they sense the aliens better than we can and don't want anything to do with them. Yes, that would—no, the aliens probably stick together, so that's out as a test."

"There are women who are satisfied with just a comfortable life," I suggested. "Those who don't drive their husbands to so much insurance that they're worth more dead than alive and then work them to death. That sounds pretty human to me."

Harry shrugged helplessly. "I guess so, but we'll never really know the answers. Or, if we do, it'll be too late."

"Too late?"

"Well, certainly," he said, tapping me on the knee. That's my ticklish spot and I was having enough trouble not laughing. "It's only in the last few generations that their plans have been coming closer to success. They have the vote, equal rights without giving up any of their privileges, and so forth. They're outliving men—and it's men, of course, who are extending the life span for them. They control about ninety per cent of the wealth. And there's something else men are doing for them." His voice sank to a significant whisper. "We're experimenting with fertilization by salt water, electrical stimulus, that sort of thing. Once we work it out properly . . . "

"We won't be needed any more," I spluttered.

"That's right," he agreed gravely. "They'll just refuse to marry, use prenatal sex determination to produce nothing but girls, and then you'll have a single race—the female race. That's what I think they want."

"It figures," I answered, trying

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to crush out my cigarette in the ridiculous tray.

He nodded. "Don't think I haven't got more than vague suspicions. And it's been damned hard; knowledge of the female conspiracy has died out in the last fifty years or so. There's no longer even that subconscious knowledge that alerted the centuries of men before—that body of tradition and folklore which is a sort of inherited wisdom of a people. We've been taught to scorn all that as superstition. Most teachers are women, of course."

"Before our time, men knew?" I gave him his straight line.

"Oh, yes," Harry said. "Homer, Ovid, Swift—'A dead wife under the table is the best goods in a man's house,' said Swift. Antiphanes, Menander, Cato—there was a wise one. 'Suffer women once to arrive at an equality with you, and they will from that moment become your superiors.' Plautus, Clement of Alexandria, Tasso, Shakespeare, Dekker, Fletcher, Thomas Browne—the list is endless. The Bible: 'How can he be clean that is born of woman?'; 'All wickedness is but little to the wickedness of a woman'; 'I suffer not a woman to teach, nor to usurp authority over the man, but to be in silence'. . .".

For fifteen minutes he continued, covering the Greeks, the Romans, the Renaissance, and hadn't begun to run dry. Even for Harry this was digging deep for a story. *This is Harry's peak,* I said to myself, a little awed. *He will never do anything better than this.*

THEN Harry began getting closer to modern times.

"'Women are much more like each other than men,' said Lord Chesterfield. And Nietzsche: 'Thou goest to women? Don't forget thy whip.' Then there was Strindberg, touched by a divine madness which gave him visions of hidden truths. Shaw concealed his suspicions in laughter lest he be torn to pieces—"

"Ibsen?" I suggested, chuckling, dredging a name out of my school days that I vaguely remembered was somehow connected with the subject.

Harry spat, as if he had something vile in his mouth.

"Ibsen! That traitor! That blind fool! It was he who first dramatized the insidious propaganda which led, eventually, to the so-called emancipation of women, and was really the loosing of the chains which kept them from ravening unrestrained."

"Ravening," I chortled. "That's the word, all right—ravening!"

"You must go back to folk sayings to get real truth," Harry went on, quieting a little. "'A

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man is happy only two times in his life,' say the Jugoslavs, 'when he marries a wife and when he buries her.' Or the Rumanians: 'When a man takes a wife, he ceases to dread Hell.' Or the Spanish: 'Who hath a wife hath also an enemy.' 'Never believe a woman, not even a dead one,' advise the German peasants. The wisdom of the Chinese: 'Never trust a woman, even though she has given you ten sons'."

He stopped, not as if he were near the end of his material, but to begin brooding.

"Did you ever look for something," he asked, "a collar button, say, or a particular pair of socks—and it isn't there and you tell your wife? Why is it that she can come and pick it up and it's been right under your nose all the time?"

"What else have they got to think about?"

"It makes you wonder," he insisted. "It makes you wonder if it really was there when you looked."

I agreed with him, and thought, *Strange, the odd truths that Harry can link into something excrutiatingly funny.*

"They have no respect for logic," said Harry. "No respect at all for the sanctity of a man's mind, for what his world is built upon. They argue as it suits them, waving away contradictions and inconsistencies as meaningless. How many of us have our Xanthippes, bent on dragging us down from our contemplation of divine truth to the destructive turmoil of daily strife? It's maddening, maddening!"

A thought struck me. So far, Harry had a number of strings, amusing in themselves, but lacking the climax that would wind them all up into a neat ball of laughter.

"What would they do," I asked, smiling, "if they discovered that someone knew their secret? They couldn't let it get around, could they?"

Harry smiled in return. For one unwary second, I thought he was slipping, giving the joke away.

"There," said Harry, "you have hit upon the crux. If my surmises are true, why has no one else discovered it? And the answer is —they have!"

"They have?" I repeated, a little surprised.

"Oh, yes," Harry answered, nodding. "And it provides the clincher. The women would have to do away with them, of course. Silence them. And it would have to show up somewhere—if one knew where to look."

"Yes?" I prompted, breathlessly.

"Why," he said, pointing a finger at me, "are there more men in asylums than women?"

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"You mean—?"

He nodded.

I collapsed, hysterical. I choked with laughter. It was only with difficulty that I was able to speak when the women came in a moment later with their bowls and potato chips and glasses of beer.

"Hi, alien," I spluttered at Jane.

And I laughed some more, especially when I looked at Harry and saw the stricken face he was putting on, horrified, terribly frightened, sort of all sunk in on himself—better, much better, than I've seen a professional actor do it on the screen.

Finally the look on the women's faces brought me around—the bored look—and I tried to share the joke. Harry was laughing, too, kind of weakly—surprising, because he always is sort of bland and mildly curious when one of his stories gets everybody writhing.

So I started telling it and got part way through and—well, you know the way it ends. I looked at Harry for help, but he wasn't giving any, and I kind of died away slowly.

"It must be the way he tells it," I sighed. "Nobody can tell stories like Harry."

You see what I mean. Women don't think Harry's funny.

The evening turned out all right, though. A little flat at the end, the way evenings usually are.

As we were going out, I heard Lucille say, kind of sharp, "Harry, there's something wrong with the hot water heater. You've been promising to look at it for days, and you've just got to do something about it tonight because I'm going to be washing tomorrow," and I heard Harry answer, "Yes, dear," mild and obedient, and I thought, *The guy's got to blow off steam somewhere,* and figured that I'd be hearing the story again at the office.

Which goes to show how wrong a man can be.

NEXT morning, Lucille called up and said Harry was sick—a stroke or a heart attack or something—and couldn't come to work. I called there a couple of times, but Lucille told me he was too sick to see anybody. I knew Harry was really sick because Lucille had Dr. Clarke, that woman doctor, and Harry's said he wouldn't have her treat his sick dog if he wanted the dog to get well. So I knew Harry was too sick to care.

It's funny how quick a fellow can go, and I got to thinking what a shame it was that Harry's finest effort, the climax of his wit, so to speak, should go with him, and how it's too bad that great vocal art should vanish without leaving a trace.

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So I began trying to remember —and I couldn't remember very good, particularly the quotations —so I did a little research of my own, just to be able to give a sample. I ran across a couple Harry missed.

One of them everybody knows. The one of Kipling's that begins, "The female of the species . . ." The other one I worked up by myself, just thinking. *Why,* I asked myself one day, *are there more widows than widowers?* Of course, I couldn't think of an answer.

It's a shame about Harry. A great guy like that, a humorist who never was given the chance to share his gift with the world—if you ask me, funnier than anybody on radio or TV or the stage; anywhere, for that matter—and here he is getting set to kick off. The least I can do is reconstruct this biggest gag he ever put together as a kind of monument to him.

Well, it's finished. I'll show it to the boys in the office tomorrow. They'll get a real kick out of it. No sense showing it to the girls, even Jane—like I said, women never thought Harry was funny.

Something else he left out, but probably only because he didn't have enough time to develop the gag the way he usually does. What kind of planet did the aliens come from? It must have a lot of carbon dioxide. Ever notice how women always complain when you open a window? It must be a hot world, too; they're cold all the time, especially their feet, which they like to put against their husband's legs, making the poor guy practically leap out of bed. I'm an expert on that—Jane's toes would chill any highball. But their world can't be that hot, because women can trot around in the coldest weather with practically nothing underneath their coats. And how about those open-toe shoes?

It doesn't add up at all. I suppose Harry would shrug it off as another proof of their alienness. Possibly he'd say it was just *outside* that women were warm; it's *in the house* that they're cold.

Well, there you are—Jane is calling me to come down to the cellar and fix the furnace. There isn't a thing wrong with it. I'm sweating, as a matter of fact. But if I don't go down and monkey around with the grate and draft, I'll never hear the end of it. And I'd better go just to save the furnace; Jane's banging it with a poker, yelling up to me that she'll fix it if I don't.

Jane with a poker; there's a laugh for you. She can't even wind a clock without breaking the mainspring.

—JAMES E. GUNN

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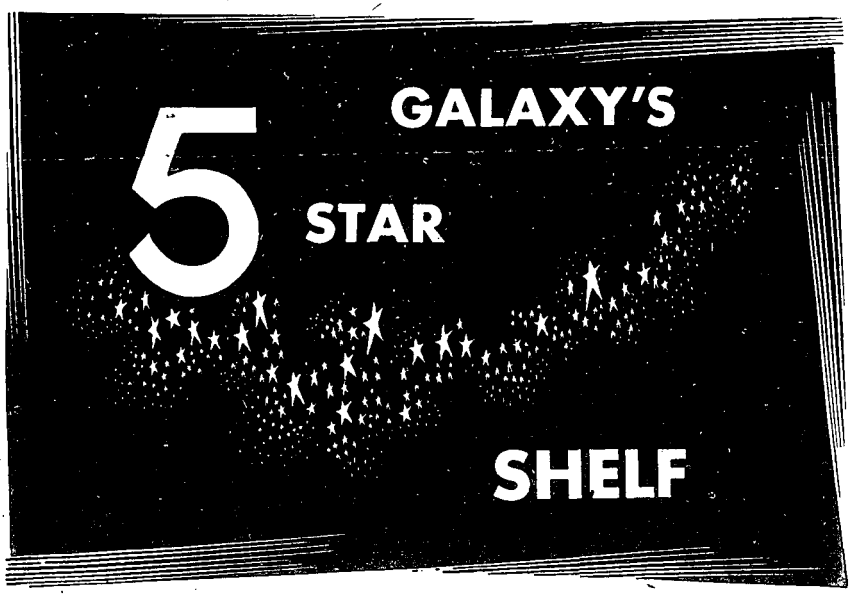

THE CRYSTAL HORDE by John Taine. Fantasy Press, Reading, Pa., 1952. 254 *pages,* $3.00

THIS tale contains one of the most magnificent science-horror ideas ever created in the Earth-cataclysm genre, and probably the worst yellow-menace-plus-Bolsheviks-plus-religious-prejudice melange ever to hit science fiction. It was originally published in 1930 under the title *White Lily* and even today, the science horror remains unsurpassed, despite its politico-sociological lumber.

The basic idea is of a semi-sentient, semi-explosive crystalline life form, living off calcium, silicon or cellulose, depending on its nature at the moment. Taine's superb word pictures of how the causative green dye went from its original eggshell (curiously apt symbolism there!) under young Tom Lane's bed in Los Angeles, on and on until it was devouring entire mountain ranges in the western desolation above Shanghai, are without doubt masterpieces of sheer evocation, superb verbal inventions that no other science fiction writer has ever outclassed.

If one could only cut the affair down to novelet size, by eliminating the Moslem *jehads,* "dirty

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Chinks" who in their stupidity kill each other off, and the Pure and Beautiful Chinese gal, White Lily, and her yawnsome warfare with the lecherous Russian agent, we would have a truly impressive piece of imaginative writing.

Much of it is, of course. But it seems to me that a publisher's obligation includes modernizing social attitudes as well as science, in the old novels he chooses to disinter.

LANDS BEYOND by L. Sprague de Camp and Willy Ley. Rinehart & Co., Inc., New York, 1952. 329 *pages plus index,* $4.75

A FASCINATING book: the natural history of pre-scientific science fiction; the story of the imagined lands and their impossible wonders that have stirred men to travel and dream ever since before the days of Homer.

The collaborators, both skilled in ferreting out little-known information in the fields of the natural sciences and anthropology, have put their heads—and libraries—together here to tell of many marvels from Atlantis to Eldorado, from Mu to the earthly Paradise.

I particularly reveled in the pages on Mu, including the fantastic etymology of the name of that grand old dream continent; in the narrative of Prester John and his fantastic, more-than-magnificent, imaginary kingdom which duped kings and popes; and in the collection of theories about the shape of the Earth, culminating in the astonishing semi-official Nazi theory that the globe was a hollow sphere with all of us inside it!

But everything in the book is fascinating, if you are among those curious-minded readers who compose a large proportion of the mature science fiction audience. You will admire its authors' erudition, at the same time that you will be delighted with their pleasantly offhand methods of displaying it.

Wonderful for the younger generations, too—fabulous tales that are much better than Captain Video!

DOUBLE JEOPARDY by Fletcher Pratt. Doubleday & Co., New York, 1952. 214 *pages,* $2.75

HERE is a slick, fast-paced science fiction detective story, one of the best-integrated combinations of its kind. It pulls together first-rate pseudo-science and high-grade detective meller of the Spillane school (but entirely clean) and the result is fine read-and-forget entertainment. Not a gram of profundity in the job; that's not needed in this sort

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of rapid-fire bedtime reading.

It really is two detective novelets, both concerned with involvements arising from the discovery of a method of duplicating matter. The first part sets the stage with a commercial spy story—a villain is duplicating rare drugs and bootlegging them.

The hero ends by marrying a duplicated gal—and very nice she is, too.

Part two, which is considerably better than the first, tells how it was possible to steal from a hermetically sealed, robot-piloted cargo plane a huge sum of money. This is definitely the latest twist in the locked-room school of murder mysteries, and a highly effective one.

MAROONED ON MARS by Lester del Rey; FIND THE FEATHERED SERPENT by Evan Hunter; SON OF THE STARS by Raymond F. Jones; FIVE AGAINST VENUS by Philip Latham; EARTHBOUND by Milton Lesser. The John C. Winston Company, Philadelphia, 1952. 207 *to* 214 *pages,* $2.00 *each*

THESE books provide made-to-order ammunition for worried parents who want to wean their young fry away from pseudo-science fiction pseudo-comics—and other sorts of com-

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ics. They are five rip-snorting adventure stories with interplanetary, time-travel and other standard backgrounds, all certain to fascinate 12-to-17-year-olds—and up.

The tales are primitive, of course, but they are written in acceptable English, rather than the space-pirate jargon that encrusts so many of the cheaper pulps and comics.

To be briefly laconic:

Hunter's tale tells of some future time travelers lost in the ancient wilds of Yucatan who start the Mayan myths; Latham's book describes an Earth family battling the horrid botany and zoology of Venus; del Rey's deals with a spaceship stowaway, a lad of 18 who becomes one of the first Earthmen on Mars—and a tough life, too; Jones offers an effective morality about how an alien visitor makes friends with an Earth lad and eventually staves off an invasion by his own kind, even though the attack was provoked by the bureaucrats who were running Earth; and finally Lesser's melodramatic and unlikely tale tells of the space cadet compelled to take part in the nasty activities of an interplanetary gang.

They're good as gifts to youngsters on birthdays and Christmas. Wish I had them when I was a kid!

SPACE HAWK by Anthony Gilmore. Greenberg: Publisher, New York, 1952. 274 *pages,* $2.75

IN some ways, this book represents the lowest point I have ever reached in my delvings into the dim half-world of space opera. This may be due to the fact that the incredible nonsense of its plot and characters is heightened by its oddly effective writing—the tawdriness of its imagination thus becomes all the more visible.

Its hero, Hawk Carse, is in the worst tradition of juvenilia, as is its villain (actual quote): "the brilliant egomaniac Dr. Ku Sui . . . devoid of every kindly human trait." Its fall-guy is (again a quote): "'Friday,' the big black Earthman whom Carse had rescued . . . from one of the Venusian slave-ships," of whom Carse was wont to say, "You're a good mechanic, Friday, but in some ways you're very innocent."

Not 'arf as innocent as the author himself!

The adventures go from absurdity to absurdity; the villains become more ludicrous from page to page; and Carse himself ends up a figure of fun, so hopelessly impossible is he.

THE SWORD OF CONAN by Robert E. Howard. Gnome Press, New York, 1952. 251 *pages,* $2.75

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HERE'S another of the same ilk as Hawk Carse. Even though this is the tale of a prehistoric hero, it still is also just another demijohn of corn. I give you Conan—

"A tall man, mightily shouldered and deep of chest, with a massive corded neck and heavily muscled limbs. His brow was low and broad under a square-cut black mane," (incidentally, Hawk Carse also had square-cut flaxen hair—"bangs," they're called—something of a new-style male hairdo, it would seem, "his eyes a volcanic blue that smoldered as if with some inner fire. His dark, scarred, almost sinister face was that of a fighting man, and his velvet garments could not conceal the hard, dangerous lines of his limbs."

This is volume two of the adventures of this "timber wolf" (page 144) of the so-called Hyperborean Age between the fall of Atlantis and the arrival of the "Sons of Aryas." Like the first, it is full of blood, sex, sadism, violence, the sort of overwriting quoted above—all the garish trappings of escape into the Greater Past of the Natural Man.

Our age may one day be known as the Spillane Era. Conan fits right in, except that he has heroism where Mike Hammer is capable only of viciousness.

—GROFF CONKLIN

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runaway

By WILLIAM MORRISON

Heroism is merely daring and ingenuity—at the age of ten—experience can come later!

Illustrated by ASHMAN

A thin speck appeared in the visor plate and grew with sinister and terrifying speed. Bursts of flame began to play around the rocketing spaceship, the explosions hurtling it from side to side as it twisted and turned in a frantic effort to escape. Rogue Rogan, his vicious lips compressed, his glittering evil eyes narrowed, heart pounding, knew that this was it.

This was the day of retribution he had so long feared . . .

"PLATO!" Plato leaped to his feet and slid the book under the pillow. Then he seized a textbook at random, and opened it wide. His eyes fastened themselves to the print, seizing upon the meaningless words as if they would save him from a

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retribution that Rogue Rogan had never had to fear.

The dorm master frowned from the doorway. "Plato, didn't you hear the Assembly bell?"

"Assembly?" Plato's eyes looked up in mild astonishment. "No, sir, I didn't hear any bell. I was so absorbed in my studying, sir—" He shut the book and placed it back with the others. "I'm sorry, sir. I'm willing to accept my punishment."

The dorm master studied the little martyr's expression. "You'd better be, Plato. Now live up to your name and show some intelligence. Run along to Assembly."

Plato ran, but he also winced. How he had suffered from that miserable name of his! Even before he had known that the original Plato had been a philosopher, even before he had been capable of understanding what a philosopher was, he had been able to see the amused expression in the eyes of those who heard his name, and had hated them for it. "Show a little intelligence, Plato." Why couldn't they have given him a name like the others? There were so many ordinary, commonplace, *manly* names from which they might have chosen. Jim, Jack, George, Tom, Bill — anything would have been better than Plato. And infinitely better than what he was sometimes called by his equals — "Plato, the dopy philosopher."

HE slipped into his seat in the Assembly quietly, so as not to interrupt the droning of the principal. So they thought his name was funny, did they? Let them laugh at him. He was only ten now, but some day he would really act like a man. Some day it would be he himself, and not a fictional hero like Comets Carter, who would be adventuring on strange planets of unknown suns, tracking down the Rogans and the other criminals who sought refuge in the wide reaches of galactic space.

Some day — and then the thought burst on him like a nova exploding in his brain.

Why not now?

Why not indeed? He was smart; he could take care of himself. Even his masters admitted that, when they weren't carping at him for his daydreaming. Take that model of a spaceship they had brought to school one day, with a retired astrogator to explain to the pupils how the thing was run, and how it avoided stray meteors. He had sat down at the controls, and even the astrogator had been surprised at how confidently he took over the role of pilot, how he got the idea at once.

He could do as well in real life. He was sure of it. Give him

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a really worthwhile problem to work on, instead of these silly questions about square roots and who discovered the third satellite of Mars, and he'd show them.

"Thus," declaimed the principal, "you will be prepared to take up your duties—"

"Norberts to you," thought Plato. "I'm going to run away."

Where to? There were so many stars to go to, such a bewildering number of planets and asteroids.

Plato sat lost in thought. A planet whose habitation required a spacesuit was out of the question. Spacesuits his size were hard to get. The sensible thing would be to choose a place where the physical conditions, from gravity to atmospheric pressure and composition would tend to resemble those here on Venus or on Earth. But full of the most thrilling danger.

A boy's voice said, "Get up, you dopy philosopher. It's all over."

He raised his head and realized that the principal had stopped droning from the platform, that all the pupils were standing up to

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leave. He stood up and marched out.

When the signal for lights out came that night, Plato lay motionless for a time in the dark, his mind racing far too rapidly for him to think of sleep. He had plans to make. And after a time, when the dormitory quieted down, he went to the well of knowledge for inspiration. He slipped on his pair of goggles and threw the special switch he himself had made. The infra-red light flared on, invisible to any one in the room but himself, and he drew his book from its hiding place and resumed his reading.

The ship curvetted in space like a prancing steed. Panic-stricken by the four-dimensional space-warp in which he was trapped, Rogue Rogan stormed at his terrified followers. "By all the devils of the Coal Sack," he shouted, "the man doesn't live who can take me alive! You'll fight and die like men, you hen-hearted cowards . . ."

But they didn't die like men. In fact, they didn't die at all, and Plato permitted a slight sneer to play across his youthful features. Though he considered himself a passionate admirer of Comets Carter, even he felt dissatisfied with the story. When they were trapped, they were never *really* trapped. Comets Carter, sterling hero that he usually was, always showed weakness of intellect at the last moment, giving his deadly enemy an incredibly simple way out, one that Comets had, in his own incredibly simple way, overlooked.

Plato would never be guilty of such stupidity. He himself—and now *he* was Comets Carter, a quicker-thinker, smarter Carter, dealing out to Rogue Rogan a retribution many eons overdue. He was whistling through space at ten light-speeds. He was compressing light-centuries into a single second. He was—

He had just time to slip the goggles from his face before his eyes closed in sleep.

DURING the day, he continued to make his plans. There was a spaceport a hundred and forty miles away. At night, if the students poked their heads out of the window, they could see the distant ships as points of flame racing away into the darkness, like shooting stars in reverse. He would steal out of his room in the night, take a glider train to the spaceport, and stow away. It would be as simple as that.

Of course, he needed money. He might travel at half fare, but even that would be expensive. And then there was the matter of food. He'd have to stay hidden

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until the spaceship took off and there was no turning back, and at the thought of crouching in some dark hold, motionless for hours, cramped, and *with an empty stomach*—

He wasn't going to starve himself. Even Comets Carter couldn't have gone without eating and got very far in his pursuit of Rogan. Plato would have to acquire money for flight, fare and food.

The book, of course, he couldn't think of selling. It was only a decicredit novel in the first place, and somewhat worn at that. And the other students would have laughed at him for reading it. But his infra-red bedside lamp and his goggles and the space-receptor radio he had built out of spare parts—those should bring him enough to travel and live on for a few days.

He made his first sale in the free time that evening, to a young squirt in the neighboring dormitory who had a passion akin to his own. He liked to listen to tales of high adventure, of the kind the radiocasters loved and the teachers in the school frowned upon. Having arrived here from Earth only six months before, he had difficulty adjusting to the type of derring-do featured on the Venus stations, and he lacked a space-receptor that would bring him his favorites from the next planet. He snapped up, at the bargain price of ten credits, the receptor that Plato offered.

There was a little difficulty with the infra-red lamp and goggles. The customer Plato had selected turned out to be rather suspicious. He demanded, "Where did you steal them?"

Plato explained patiently, "I didn't steal them. I made them myself."

"That's a lot of hot oxo-nitrogen. You hooked them some place, and if they ever find out—"

"Okay," said Plato, "if you don't want them, you don't have to take them. I can sell them to somebody else."

He allowed the young skeptic to try the goggles on and read by the light of the lamp. He knew little of the psychology of salesmanship, but with what might be called Platonic shrewdness, he sensed that once the prospect had experienced the joys of using the magic articles, he would never give them up.

The method worked. And soon Plato was richer by fifteen credits, instead of the ten or twelve he had hoped for.

He had a few other odds and ends, which he sold for as much as they would bring. After all, once he was out in space, he wouldn't need them any more.

IN the middle of the next day, when the bell sounded the end

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of the class on Planetary Geography and it was time to go to the class on Animal Physiology, Plato picked himself up and walked out. One of the 'copter custodians looked at him suspiciously, but Plato didn't dignify the man by paying him direct attention.

He muttered to himself, "Always picking on me. I don't see why he can't send somebody else on his errands." It was better than the forged pass signed with the headmaster's name.

The pass itself came in handy when he bought a flight ticket. The ticket agent also stared at him suspiciously, but Plato was ready for him. He had prepared the slip of paper beforehand, tracing the headmaster's name laboriously from one of the lists of regulations attached to the wall.

To make pursuit as difficult as possible for any one who tried to trail him, Plato asked for a ticket not to Space Junction, where he was going, but to Venusberg, in the opposite direction. Both tickets cost about the same; the ticket to Venusberg, in fact, cost three decicredits more. Once on the plane-drawn glider, he could explain to the conductor that the agent had made a mistake and offer the ticket he had. Since the company would lose nothing by the transaction, there was no reason why the conductor should object.

Plato was proud of this bit of trickery, and he flattered himself that by means of it he had entirely thrown off pursuit. It must be remembered that he was only ten years old.

On the glider-flight, he found himself sitting next to a middle-aged woman who wore glasses and was surrounded by packages. She beamed at him, as she did at every one else around her, and Plato shrank back into his seat. If there was anything he didn't want on this trip, it was to be mothered.

But he couldn't escape her. She said, "My, my, you're awfully young to be traveling alone. This the first time?"

"Yes, ma'am," said Plato nervously, afraid of the embarrassing questions he could read on her face.

Hastily he stared out over the side and gasped, "Gee, how small everything is!"

Imagine anyone who had traveled vicariously through space with Comets Carter being awed by a flight in a plane-drawn glider! But the ruse worked.

She said, "Yes, it is frightening, isn't it? Even worse than space travel."

"You've been in space, ma'am?"

"Bless your heart, I've been in

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space more times than you could shake a stick at. The takeoff isn't so nice, I'll admit, but after that you're just sailing free. What are you going to be when you grow up?"

They had his future all planned for him, but he knew that he wasn't going to be any of the things they wanted him to be.

He said boldly, "A space explorer."

She laughed. "You youngsters are all alike inside, no matter how different you seem. My boy was the same way when he was young. But he got over it. A space explorer, no less!"

PLATO didn't answer. It was only a half hour's trip, and the conductor was walking down the aisle. Plato found it difficult to take his eyes off him. He was afraid that the man would take a look at his ticket; say, "Wrong plane, son," and turn him over to the stationmaster at Space Junction, to be shipped back.

In his nervousness, Plato had difficulty getting his ticket out of his pocket. As he had expected, the conductor said, "You're on the wrong flight."

The motherly woman exclaimed, "Oh, isn't that a shame! Are they waiting for you in Venusberg?"

Plato said tearfully, "Yes, ma'am." The tearfulness wasn't hard to manage; he'd learned the trick at school.

"That's too bad. How are you going to get there?"

"I don't know. I had just enough money to pay for this ticket."

"Doesn't the company correct mistakes, Conductor?"

"Not mistakes the passengers make," said the conductor sourly. "I'm sorry, boy, I'll have to take that ticket."

The woman's eyes flashed and, as the conductor moved on, she said, "The nasty thing. They have no consideration at all. Look, child." For a moment Plato thought she was going to offer him flight fare from Space Junction to Venusberg, but she was not, he discovered, as motherly as that. "You know what you'll do when you get off? Send a 'gram, collect, to your people in Venusberg. They'll wire you your fare. And you'll reach them in a couple of hours."

"Thank you, ma'am," he said, not feeling thankful at all. So it was all right to be sympathetic, he thought indignantly, up to the point where sympathy might cost her money. Like most people, she was free-handed only with advice.

Who wanted advice?

AT Space Junction he waved her a shy farewell, and then

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turned and disappeared into the station crowd.

At the takeoff grounds, his heart sank. As he might have expected, the entrance to the space tarmac was well guarded. How was he going to become a stowaway on a spaceship if he couldn't even get close to it?

He wandered around outside, staring through the charged wire fence at the crowds, the spacemen, the ships inside. They were gigantic shining things, those wonderful ships, each so long that he realized for the first time how far away they must have been and how rapidly they must have traveled, for those he saw had seemed to him like shooting stars. They were pointed almost straight up. Near the stern of each ship was a vacuum-pit to absorb the radioactive exhaust gases.

His eye caught an old tub, its shininess dulled, its hull faintly scarred. Just such a ship, he thought with a thrill, as the one on which Comets Carter had been shanghaied on that momentous occasion when . . .

The old freighter swung a great circle, its torsion jets blasting desperately in an effort to keep it on an even keel. This, thought Comets Carter, was it. This was the foul revenge that Rogue Rogan had planned, the evil death he had plotted with his unhuman companions. In a moment the pulsating radiations of electroid rays would set off the cargo of ghoulite, and when the interplanetary echoes of the explosion died away, Comets Carter would be no more than a series of photon packets, his body torn apart, his very atoms converted into radiation that was hurtling with the speed of light to the far corners of the universe . . .

It hadn't happened that way, of course. But if it *had* happened —well, it might have on just such a tub as this.

A guard saw him peering through the fence, and said, "What are you looking at, kid?"

"Those ships," said Plato, honestly enough. And then he added, to throw the man off the track, "Gee, I'd be scared to go up in one of them. No, sir, you couldn't get me into one of them for a million credits."

The man laughed. "They're not for the likes of you. A lot of those ships go to other stars."

"Other stars? Gosh! Does that little one, the *Marie T.*—"

"That tub? Just an interplanetary freighter. But even that isn't for you. Now run along and mind your own business."

Plato was happy to run along. Unfortunately, he realized, running along didn't help him to get

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past the fence.

And then he had a fear-inspiring thought. He couldn't tell an interplanetary ship from an interstellar. What if he did manage, somehow, to get in and stow away—and then found himself on a ship bound for no more distant port than Earth, from which he could easily be sent home in disgrace?

It sent a shiver through him. Fortunately, it also stimulated his mind. After all, there *were* such things as newspapers, and the school, nuisance in many ways though it was, had taught him to read.

HE bought a paper and turned at once to the shipping news section. As he had hoped, every ship was listed. He checked off some of the names he had glimpsed on the field, and found happily that their destinations were printed in the most routine manner.

There still remained the question of how to get past the guards. This, he suddenly realized, was a question impossible to solve on an empty stomach. It had been many hours since he had eaten lunch.

There were a dozen restaurants in the spaceport, and he selected one carefully, studying the illuminated menus and the prices before daring to enter. If that motherly old woman had been as kind-hearted as she pretended to be, he wouldn't have had to worry so much about prices. As it was, he knew that he had money enough for only two days, and after that—his stomach could complain all it wanted to, it would have to go unfed.

He chose from the menu only items that he never tasted at school—dishes made from real plant and animal life, with just enough synthetics to give them flavor. He couldn't say that he liked what he ate, but at least it gave him the feeling of being on his own, of having made the break with his tame past as complete as possible. Earth-beef tasted too strong; Venus seaweed stew had a pungency that he didn't like.

He finished his plate only because he had been taught that to leave food over was wasteful. And for the first time he began to wonder what they would feed him on the spaceship. Suppose he got on one that wasn't scheduled to make port for five years—and all he received to eat was stuff like this? The thought made him shudder. Here was a hardship of space travel that the books he read had never mentioned.

After eating, he slumped back in his chair. He hadn't realized he was so completely exhausted until a hand shook his shoulder.

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Then he awoke with a start.

A waiter said, "This is no place to sleep, youngster."

"I'm sorry, sir. I was tired and I didn't realize."

"You been here for a long time. Waiting for someone?"

"Yes, sir. Something must have held him up."

"Seems to me that I noticed you walk in here about three hours ago. That's a long time to wait."

"That's what I thought, sir. I can't understand what happened."

"Well, you can't hang around here. I'll tell you what I'll do, though. I'll turn you over to the matron in our Lost and Found room, and she'll look out for you. Follow me."

IN a daze, Plato followed. But as his feet were set into motion, so was his brain. By now, of course, the search for him must be well on. They must have traced him to the station, and perhaps, despite his clever trick with the ticket, they had found the flight he had taken. For all he knew, they might be waiting for him in the Lost and Found room, ready to seize him the moment he showed his face there.

He hadn't gone so far to be recaptured so easily. As they passed an exit door, Plato darted out. He heard the waiter's surprised shout, but he didn't wait to reply. In a second, he had lost himself in the crowd.

He knew now that if he was going to get aboard an interstellar vessel, he would have to do so soon. What would Comets Carter have done in Plato's place—if Comets had been in one of his brighter moods? And then he had it. He saw a messenger coming down the street, gleaming in his uniform, and, somewhat nervously, approached him.

"May I speak to you?" asked Plato, with school-taught politeness.

"What about, bud? I'm busy."

"Well, I've been wanting to get Captain Halverson's autograph. He's on the *Space Symphony*—"

"So what?"

"Well, the thing is, they won't let me past the gate. So I thought that if I wore a messenger's uniform—"

The other boy glared at him. "Are you off your Norbert? I wouldn't let you wear this uniform for a zillion credits."

Plato swallowed nervously, and said in desperation, "I don't have a zillion credits, but I've got eight, and I'll give them to you if you let me wear it. Just half an hour, that's all it'll take. It's the last chance I'll have to ask him. He's bound for Rigel, and he won't be back for five years, and you see—"

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His voice tapered to a thin, tearful squeak as the messenger looked at him.

"You're offering me eight space-lousy credits?"

"It's all I have. We'll just change clothes for a few minutes, and that'll be all. Please, I've got to see him. I know that if I do, he'll give me his autograph."

"Okay," said the messenger unexpectedly. "But hurry back. I'll be at the gate waiting for you."

AS they exchanged clothes, Plato was almost feverish with excitement. But he knew that if he expected to get past the guard, he would have to control himself. The clothes didn't fit too well, even though the messenger was small, and he must do nothing that would arouse the guard's suspicion.

He said to the messenger, "Gee, thanks. You don't know how much this means to me." And then, with a mental grip on himself so tense that it hurt physically, he approached the guard, and said casually, "Earth 'gram for Captain Halverson."

The guard hardly looked at him. He was past the gate!

He had been tricky again. Once out of sight of the guard, he made not for the *Space Symphony*, but for the *Long Ranger*, bound for Aldebaran.

"Earth 'gram for Captain Brinjar," he muttered, doing his best to look bored, as if delivering 'grams to ships was an old thing to him. And then he was aboard!

It was not quite what he expected. The smooth walls were such as he might have found in his own dormitory. The quarters, he saw, were cramped, although for someone his size they were at least adequate. And the passageways, although brilliantly lighted, were mere narrow tunnels.

From the main passageway, other tunnels branched off bewilderingly, and Plato hesitated until he realized that his very confusion gave him an excuse for poking his nose into all sorts of places. He followed one of the tunnels until he came to a door: ENGINE ROOM—KEEP OUT.

He entered. A mechanic looked up.

"Earth 'gram for Captain Brinjar. They said he was around here."

"Not here," replied the mechanic. "Try the cargo hold."

Plato backed out and set off down the corridor again, noting the direction arrows and signs. TO MAIN LOUNGE—no good. TO CAPTAIN'S CABIN — worse. He didn't want to find the captain and lose his excuse for being there.

And then he saw TO FOOD STORAGE and knew that he need look

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no further. This was a place both to hide and to eat, until the ship took off, and the crew found him, and had to accept him as one of themselves.

He opened the door to the food storage hold with an elaborate caution that turned out to be unnecessary. There was no one inside. He settled down between two packing cases and let out his breath. He had made it. He had stowed away successfully, and in a few hours he would be out in space, traveling between the stars, fighting, adventuring—

A yawn almost wiped the smile off his face.

HE awoke to disaster. The captain and Plato's dorm master were standing there, staring down at him, and the dorm master was saying, "All right, Plato, you've had your adventure, and now I'm afraid you'll have to pay for it. It's time to go home."

Plato couldn't move. It was impossible, after he had been so clever, so ingenious, and had thrown them off the trail in so many ways, for them to have found him!

"You shouldn't have bought a ticket to the wrong station," said the dorm master, somewhat amusedly. "When the conductor turned it in, the only one of its kind on his flight, it naturally attracted attention. We hadn't even suspected you had taken a glider-train until the flight people came to us."

Now he would never adventure on strange planets of unknown suns. He would never course through space like Comets Carter. He would never have the adventures which alone made life seem worth living.

Unable to control himself, he burst into tears. It was a completely unmanly thing to do, but he couldn't help himself. The tears flowed down over his cheeks, washing away all his shattered illusions. He would never dream such dreams again. From now on, it would be useless. They would be watching him carefully to make sure that he didn't leave the planet.

He heard the captain say in astonishment, "I didn't know these young ones could cry like that."

"Of course they cry," replied the dorm master. "They eat, sleep, cry—almost like you and me, Captain. And worst of all, they even have their dreams. That's why I sometimes wonder, Captain, if it isn't a mistake to send them to school."

"They have to learn."

"Granted," agreed the dorm master somberly. "But not to dream of being human when they're only androids."

—WILLIAM MORRISON

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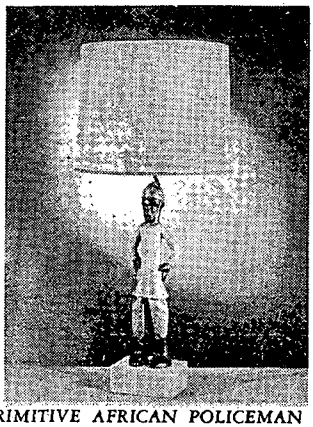

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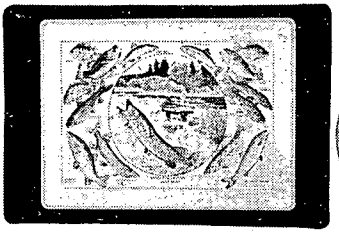

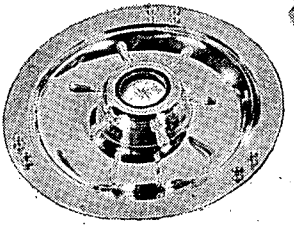

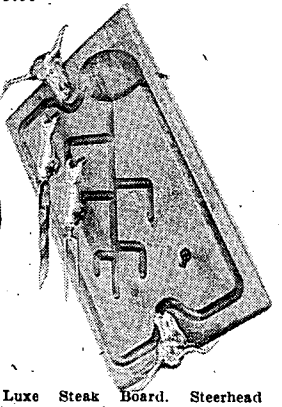

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You'd Like To Get.

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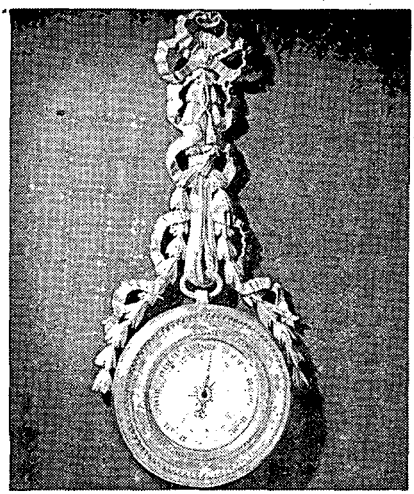
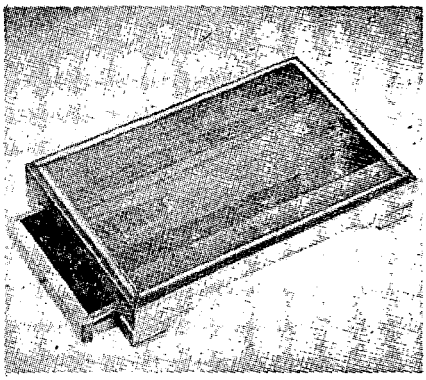


6 Louis the XVI barometer made of selected hand-carved hardwood with a gold leaf finish (A). This barometer is a faithful reproduction catching the gay era elegance of the Louis the XVI period. The barometer works are fine ones imported from Germany. The antique face has been faithfully reproduced. This barometer is also available in carved oak with a limed finish (B). 34¾" long 16¼" wide. Specify A or B finish. Price $190.00



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Command Performance

Voices in the mind do not necessarily mean bats in the belfry. Sometimes they have to be hunted down, however, like wild beasts!

Illustrated by ASHMAN

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By WALTER M. MILLER, JR.

QUIET misery in a darkened room. The clock spoke nine times with a cold brass voice. She stood motionless, leaning against the drapes by the window, alone. The night was black, the house empty and silent.

"Come, Lisa!" she told herself. *"You're not dying!"*

She was thirty-four, still lovely, with a slender white body and a short, rich thatch of warm red hair. She had a good dependable husband, three children, and security. She had friends, hobbies, social activities. She painted mediocre pictures for her own

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amusement, played the piano rather well, and wrote fair poetry for the University's literary quarterly. She was well-read, well-rounded, well-informed. She loved and was loved.

Then why this quiet misery?

Wanting something, expecting nothing, she stared out into the darkness of the stone-walled garden. The night was too quiet. A distant street lamp played in the branches of the elm, and the elm threw its shadow across another wing of the house. She watched the shadow's wandering for a time. A lone car purred past in the street and was gone. A horn sounded raucously in the distance.

What was wrong? A thousand times since childhood she had felt this uneasy stirring, this crawling of the mind that called out for some unfound expression. It had been particularly strong in recent weeks.

SHE tried to analyze. What was different about recent weeks? Events: Frank's job had sent him on the road for a month; the children were at Mother's; the city council had recommended a bond issue; she had fired her maid; a drunk had strangled his wife; the University had opened its new psychophysics lab; her art class had adjourned for the summer.

Nothing there. No clue to the unreasoning, goalless urge that called like a voice crying in mental wilderness: "*come, share, satisfy, express it to the fullest!*"

Express what? Satisfy what? How?

A baby, deserted at birth and dying of starvation, would feel terrible hunger. But if it had never tasted milk, it could not know the meaning of the hunger nor how to ease it.

"*I need to relate this thing to something else, to something in my own experience or in the experience of others.*" She had tried to satisfy the urge with the goals of other hungers: her children, her husband's lovemaking, food, drink, art, friendship. But the craving was something else, crying for its pound of unknown flesh, and there was no fulfillment.

"*How am I different from others?*" she asked herself. But she was different only in the normal ways that every human being is different from the exact Average. Her intelligence was high, short of genius, but superior. To a limited extent, she felt the call of creativity. Physically, she was delicately beautiful. The only peculiarities that she knew about seemed ridiculously irrelevant: a dark birthmark on her thigh, a soft fontanel in the top of her long narrow head, like the

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soft spot in an infant's cranium. Silly little differences!

One big difference: the quiet misery of the unfed hunger.

A scattering of big raindrops suddenly whispered on the walk and in the grass and through the foliage of the elm. A few drops splattered on the screen, spraying her face and arms with faint points of coolness. It had been oppressively hot. Now there was a chill breath in the night.

Reluctantly she closed the window. The oppression of the warm and empty house increased. She walked to the door opening into the walled garden.

Ready for a lonely bed, she was wearing a negligee over nothing. Vaguely, idly, her hand fumbled at the waist-knot, loosened it. The robe parted, and the fine spray of rain was delightfully cool on her skin.

The garden was dark, the shadows inky, the nearest neighbor a block away. The wall screened it from prying eyes. She brushed her hands over her shoulders; the sleeves slipped down her arms. Peeled clean, feeling like a freed animal, she pressed open the screen and stepped out under the eaves to stand on the warm stone walk.

THE rain was rattling in the hedge and roaring softly all about her, splashing coldness about her slender calves. She hugged herself and stepped into it. The drench of icy fingers stroked her with pleasant lashes; she laughed and ran along the walk toward the elm. The drops stung her breasts, rivered her face, and coursed coldly down her sides and legs.

She exulted in the rain, tried to dance and laughed at herself. She ran. Then, tired, she threw herself down on the crisp wet lawn, stretching her arms and legs and rolling slowly on the grass. Eyes closed, drenched and languorous, she laughed softly and played imagining games with the rain.

The drops were steel-jacketed wasps, zipping down out of the blackness, but she melted them with her mind, made them soft and cool and caressing. The drops took impersonal liberties with her body, and she rolled demurely to lie face down in the rain-soft grass.

"*I am still a pale beast,*" she thought happily, "*still kin of my grandmother the ape who danced in the tree and chattered when it rained. How utterly barren life would be, if I were not a pale beast!*"

She dug her fingers into the sodden turf, bared her teeth, pressed her forehead against the ground, and growled a little animal growl. It amused her, and she

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laughed again. Crouching, she came up on her hands and knees, hunching low, teeth still bared. Like a cat, she hissed—and pounced upon a sleeping bird, caught it and shook it to death.

Again she lay laughing in the grass.

"If Frank were to see me like this," she thought, *"he would put me to bed with a couple of sleeping pills, and call that smug Dr. Mensley to have a look at my mind. And Dr. Mensley would check my ambivalences and my repressions and my narcissistic, voyeuristic, masochistic impulses. He would tighten my screws and readjust me to reality, fit me into a comfortable groove, and take the pale beast out of me to make me a talking doll."*

He had done it several times before. Thinking of Dr. Mensley, Lisa searched her vocabulary for the most savage word she could remember. She growled it aloud and felt better.

The rain was slowly subsiding. A siren was wailing in the distance. The police. She giggled and imagined a headline in tomorrow's paper: PROMINENT SOCIALITE JAILED FOR INDECENT EXPOSURE. And the story would go on: "Mrs. Lisa Waverly was taken into custody by the police after neighbors reported that she was running around stark naked in her back yard. Said Mrs. Heinehoffer who called the law: 'It was just terrible. Looked to me like she was having fits.' Mr. Heinehoffer, when asked for comment, simply closed his eyes and smiled ecstatically."

Lisa sighed wearily. The siren had gone away. The rain had stopped, except for drippings out of the elm. She was tired, emotionally spent, yet strangely melancholy. She sat up slowly in the grass and hugged her shins.

The feeling came over her gradually.

"Someone has been watching me!"

SHE stiffened slowly, but remained in place, letting her eyes probe about her in the shadows. If only the drippings would stop so she could listen! She peered along the hedge, and along the shadows by the garden wall, toward the dark windows of the house, up toward the low-hanging mist faintly illuminated from below by street lights. She saw nothing, heard nothing. There was no movement in the night. Yet the feeling lingered, even though she scoffed.

"If anyone is here," she thought, *"I'll call them gently, and if anyone appears, I'll scream so loud that Mrs. Heinehoffer will hear me."*

"Hey!" she said in a low voice, but loud enough to penetrate any

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of the nearby shadows.

There was no answer. She folded her arms behind her head and spoke again, quietly, sensually.

"Come and get me."

No black monster slithered from behind the hedge to devour her. No panther sprang from the elm. No succubus congealed out of wet darkness. She giggled.

"Come have a bite."

No bull-ape came to crush her in ravenous jaws.

She had only imagined the eyes upon her. She stretched lazily and picked herself up, pausing to brush off the leaves of grass pasted to her wet skin. It was over, the strange worship in the rain, and she was weary. She walked slowly toward the house.

Then she heard it—a faint crackling sound, intermittent, distant. She stood poised in the black shadow of the house, listening. The crackle of paper . . . then a small pop . . . then crisp fragments dropped in the street. It was repeated at short intervals.

Taking nervous, shallow breaths, she tiptoed quietly toward the stone wall of the garden. It was six feet high, but there was a concrete bench under the trellis. The sound was coming from over the wall. She stood crouching on the bench; then, hiding her face behind the vines, she lifted her head to peer.

The street lamp was half a block away, but she could see dimly. A man was standing across the street in the shadows, apparently waiting for a bus. He was eating peanuts out of a paper bag, tossing the shells in the street. That explained the crackling sound.

She glared at him balefully from behind the trellis.

"*I'll claw your eyes out,*" she thought, "*if you came and peeped over my wall.*"

"Hi!" the man said.

LISA stiffened and remained motionless. It was impossible that he could see her. She was in shadow, against a dark background. Had he heard her foolish babbling a moment ago?

More likely, he had only cleared his throat.

"Hi!" he said again.

Her face was hidden in the dripping vines, and she could not move without rustling. She froze in place, staring. She could see little of him. Dark raincoat, dark hat, slender shadow. Was he looking toward her? She was desperately frightened.

Suddenly the man chucked the paper bag in the gutter, stepped off the curb, and came sauntering across the street toward the wall. He removed his hat, and crisp blond hair glinted in the distant streetlight. He stopped three yards away, smiling uncer-

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tainly at the vines.

Lisa stood trembling and frozen, staring at him in horror. Strange sensations, utterly alien, passed over her in waves. There was no describing them, no understanding them.

"I—I found you," he stammered sheepishly. "Do you know what it is?"

"*I know you,*" she thought. "*You have a small scar on the back of your neck, and a mole between your toes. Your eyes are blue, and you have an impacted wisdom tooth, and your feet are hurting you because you walked all the way out here from the University, and I'm almost old enough to be your mother. But I can't know you, because I've never seen you before!*"

"Strange, isn't it?" he said uncertainly. He was holding his hat in his hand and cocking his head politely.

"What?" she whispered.

He shuffled his feet and stared at them. "It must be some sort of palpable biophysical energy-form, analytically definable—if we had enough data. Lord knows, I'm no mystic. If it exists, it's got to be mathematically definable. But why us?"

Horrified curiosity made her step aside and lean her arms on the wall to stare down at him. He looked up bashfully, and his eyes widened slightly.

"Oh!"

"Oh what?" she demanded, putting on a terrible frown.

"You're beautiful!"

"What do you want?" she asked icily. "Go away!"

"I—" He paused and closed his mouth slowly. He stared at her with narrowed eyes, and touched one hand to his temple as if concentrating.

FOR an instant, she was no longer herself. She was looking up at her own shadowy face from down in the street, looking through the eyes of a stranger who was not a stranger. She was feeling the fatigue in the weary ankles, and the nasal ache of a slight head cold, and the strange sadness in a curious heart—a sadness too akin to her own.

She rocked dizzily. It was like being in two places at once, like wearing someone else's body for a moment.

The feeling passed. "*It didn't happen!*" she told herself.

"No use denying it," he said quietly. "I tried to make it go away, too, but apparently we've got something unique. It would be interesting to study. Do you suppose we're related?"

"Who are you?" she choked, only half-hearing his question.

"You know my name," he said, "if you'll just take the trouble to think about it. Yours is Lisa—

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Lisa O'Brien, or Lisa Waverly—I'm never sure which. Sometimes it comes to me one way, sometimes the other."

She swallowed hard. Her maiden name had been O'Brien.

"I don't know you," she snapped.

His name was trying to form in her mind. She refused to allow it. The young man sighed.

"I'm Kenneth Grearly, if you really don't know." He stepped back a pace and lifted his hat toward his head. "I—I guess I better go. I see this disturbs you. I had hoped we could talk about it, but—well, good night, Mrs. Waverly."

He turned and started away.

"Wait!" she called out against her will.

He stopped again. "Yes?"

"Were—were you watching me—while it was raining?"

He opened his mouth and stared thoughtfully down the street toward the light. "You mean watching visually? You really are repressing this thing, aren't you? I thought you understood." He looked at her sharply, forlornly. "They say the failure to communicate is the basis of all tragedy. Do you suppose in our case . . . ?"

"What?"

"Nothing." He shifted restlessly for a moment. "Good night."

"Good night," she whispered many seconds after he was gone.

HER bedroom was hot and lonely, and she tossed in growing restlessness. If only Frank were home! But he would be gone for two more weeks. The children would be back on Monday, but that was three whole days away. Crazy! It was just stark raving crazy!

Had the man really existed—what was his name?—Kenneth Grearly? Or was he only a phantasm invented by a mind that was failing — her mind? Dancing naked in the rain! Calling out to shadow shapes in the brush! Talking to a specter in the street! Schizophrenic syndrome—dream-world stuff. It could not be otherwise, for unless she had invented Kenneth Grearly, how could she know he had sore feet, an impacted wisdom tooth, and a head cold. Not only did she know about those things, but she felt them!

She buried her face in the dusty pillow and sobbed. Tomorrow she would have to call Dr. Mensley.

But fearing the specter's return, she arose a few minutes later and locked all the doors in the house. When she returned to bed, she tried to pray but it was as if the prayer were being watched. Someone was listening, eavesdropping from outside.

Kenneth Grearly appeared in

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her dreams, stood half-shrouded in a slowly swirling fog. He stared at her with his head cocked aside, smiling slightly, holding his hat respectfully in his hands.

"Don't you realize, Mrs. Waverly, that we are mutants perhaps?" he asked politely.

"No!" she screamed. "I'm happily married and I have three children and a place in society! Don't come near me!"

He melted slowly into the fog. But echoes came monotonously from invisible cliffs: *mutant mutant mutant mutant mutant* . . .

Dawn came, splashing pink paint across the eastern sky. The light woke her to a dry and empty consciousness, to a headachy awareness full of dull anxiety. She arose wearily and trudged to the kitchen for a pot of coffee.

Lord! Couldn't it all be only a bad dream?

In the cold light of early morning, the things of the past night looked somehow detached, unreal. She tried to analyze objectively.

That sense of sharing a mind, a consciousness, with the stranger who came out of the shadows—what crazy thing had he called it?—"*some sort of palpable biophysical energy-form, analytically definable.*"

"*If I invented the stranger,*" she thought, "*I must have also invented the words.*"

But where had she heard such words before?

LISA went to the telephone and thumbed through the directory. No Grearly was listed. If he existed at all, he probably lived in a rooming house. The University—last night she had thought that he had something to do with the University. She lifted the phone and dialed.

"University Station; number please," the operator said.

"I—uh—don't know the extension number. Could you tell me if there is a Kenneth Grearly connected with the school?"

"Student or faculty, Madam?"

"I don't know."

"Give me your number, please, and I'll call you back."

"Lawrence 4750. Thanks, Operator."

She sat down to wait. Almost immediately it rang again.

"Hello?"

"Mrs. Waverly, you were calling me?" A man's voice. His voice!

"The operator found you rather quickly." It was the only thing she could think of saying.

"No, no. I knew you were calling. In fact, I hoped you into it."

"Hoped me? Now look here, Mr. Grearly, I—"

"You were trying to explain our phenomenon in terms of insanity rather than telepathy. I didn't

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want you to do that, and so I hoped you into calling me."

Lisa was coldly speechless. "What phenomenon are you talking about?" she asked after a few dazed seconds.

"Still repressing it? Listen, I can share your mind any time I want to, now that I understand where and who you are. You might as well face the fact. And it can work both ways, if you let it. Up to now, you've been—well, keeping your mind's eye closed, so to speak."

Her scalp was crawling. The whole thing had become intensely disgusting to her.

"I don't know what you're up to, Mr. Grearly, but I wish you'd stop it. I admit something strange is going on, but your explanation is ridiculous—offensive, even."

He was silent for a long time, then: "I wonder if the first man-ape found his prehensile thumb ridiculous. I wonder if he thought using his hands for grasping was offensive."

"What are you trying to say?"

"That I think we're mutants. We're not the first ones. I had this same experience when I was in Boston once. There must be one of us there, too, but suddenly I got the feeling that he had committed suicide. I never saw him. We're probably the first ones to discover each other."

"Boston? If what you say is true, what would distance have to do with it?"

"Well, if telepathy exists, it certainly involves transfer of energy from one point to another. What *kind* of energy, I don't know. Possibly electromagnetic in character. But it seems likely that it would obey the inverse square law, like radiant energy-forms. I came to town about three weeks ago. I didn't feel you until I got close."

"*There is a connection,*" she thought. She had been wondering about the increased anxiety of the past three weeks.

"I don't know what you're talking about," she evaded icily, though. "I'm no mutant. I don't believe in telepathy. I'm not insane. Now let me alone."

She slammed the telephone in its cradle and started to walk away.

Evidently he was angry, for she was suddenly communicating with him again.

SHE reeled dizzily and clutched at the wall, because she was in two places at once, and the two settings merged in her mind to become a blur, like a double exposure. She was in her own hallway, and she was also in an office, looking at a calculator keyboard, hearing glassware rattling from across a corridor, aware of the smell of formalde-

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hyde. There was a chart on the wall behind the desk and it was covered with strange tracery—schematics of some neural arcs. The office of the psychophysics lab. She closed her eyes, and her own hallway disappeared.

She felt anger—his anger.

"We've got to face this thing If this is a new direction for human evolution, then we'd better study it and see what to do about it. I knew I was different and I became a psychophysicist to find

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out why. I haven't been able to measure much, but now with Lisa's help . . ."

She tried to shut him out. She opened her eyes and summoned her strength and tried to force him away. She stared at the bright doorway, but the tracery of neural arcs still remained. She fought him, but his mind lingered in hers.

"*. . . perhaps we can get to the bottom of it. I know my encephalograph recordings are abnormal, and now I can check them against hers. A few correlations will help. I'm glad to know about her soft fontanel. I wondered about mine. Now I think that underneath that fontanel lies a pattern of specialized neural—*"

She sagged to the floor of the hall and babbled aloud: "Hickory Dickory Dock, the mouse ran up the clock. The clock struck one—"

Slowly he withdrew. The laboratory office faded from her vision. His thoughts left her. She lay there panting for a time.

Had she won?

No, there was no sense in claiming victory. She had not driven him away. He had withdrawn of his own volition when he felt her babbling. She knew his withdrawal was free, because she had felt his parting state of mind: sadness. He had stopped the forced contact because he pitied her, and there was a trace of contempt in the pity.

She climbed slowly to her feet, looking around wildly, touching the walls and the door-frame to reassure herself that she was still in her own home. She staggered

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into the parlor and sat shivering on the sofa.

Last night! That crazy running around in the rain! He was responsible for that. He had hoped her into doing it, or maybe he had just wondered what she looked like undressed, and she had subconsciously satisfied his curiosity. He had planted the suggestion—innocently, perhaps—and she had unknowingly taken the cue.

He could be with her whenever he wanted to! He had been with her while she frollicked insanely in the rain-sodden grass! Perhaps he was with her now.

Whom could she talk to? Where could she seek help? Dr. Mensley? He would immediately chalk it up as a delusion, and probably call for a sanity hearing if she wouldn't voluntarily enter a psycho-ward for observation.

The police? "Sergeant, I want to report a telepathic prowler. A man is burglarizing my mind."

A clergyman? He would shudder and refer her to a psychiatrist.

All roads led to the booby-hatch, it seemed. Frank wouldn't believe her. No one would believe her.

LISA wandered through the day like a caged animal. She put on her brightest summer frock and a pert straw hat and went downtown. She wandered through the crowds in the business district, window-shopping. But she was alone. The herds of people about her brushed past and wandered on. A man whistled at her in front of a cigar store. A policeman waved her back to the curb when she started across an intersection.

"Wake up, lady!" he called irritably.

People all about her, but she could not tell them, explain to them, and so she was alone. She caught a taxi and went to visit a friend, the wife of an English teacher, and drank a glass of iced tea in the friend's parlor, and talked of small things, and admitted that she was tired when the friend suggested that she looked that way. When she went back home, the Sun was sinking in the west.

She called long distance and talked to her mother, then spoke to her children, asked them if they were ready to come home, but they wanted to stay another week. They begged, and her mother begged, and she reluctantly consented. It had been a mistake to call. Now the kids would be gone even longer.

She tried to call Frank in St. Louis, but the hotel clerk reported that he had just checked out. Lisa knew this meant he was

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on the road again.

"*Maybe I ought to go join the kids at Mother's,*" she thought. But Frank had wanted her to stay home. He was expecting a registered letter from Chicago, and it was apparently important, and she had to take care of it.

"*I'll invite somebody over,*" she thought. But the wives were home with their husbands, and it was a social mistake to invite a couple when her husband was gone. It always wound up with two women yammering at each other while the lone male sat and glowered in uneasy isolation, occasionally disagreeing with his wife, just to let her know he was there and he was annoyed and bored and why didn't they go home? It was different if the business-widow called on a couple. Then the lone male could retire to some other part of the house to escape the yammering.

But she decided it wasn't company she wanted; she wanted help. And there was no place to get it.

WHEN she allowed her thoughts to drift toward Kenneth Grearly, it was almost like tuning in a radio station. He was eating early dinner in the University cafeteria with a bedraggled, bespectacled brunette from the laboratory. Lisa closed her eyes and let herself sift gingerly into his thoughts. His attention was on the conversation and on the food, and he failed to realize Lisa's presence. That knowledge gave her courage.

He was eating Swiss steak and hashed brown potatoes, and the flavors formed perceptions in her mind. She heard the rattle of silverware, the low murmur of voices, and smelled the food. She marveled at it. The strange ability had apparently been brought into focus by learning what it was and how to use it.

"Our work has been too empirical," he was saying. "We've studied phenomena, gathered data, looked for correlations. But that method has limitations. We should try to find a way to approach psychology from below. Like the invariantive approach to physics."

The girl shook her head. "The nervous system is too complicated for writing theoretical equations about it. Empirical equations are the best we can do."

"They aren't good enough, Sarah. You can predict results with them, inside the limits of their accuracy. But you can't extrapolate them very well, and they won't stack up together into a single integrated structure. And when you're investigating a new field, they no longer apply. We need a broad mathematical the-

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ory, covering all hypothetically possible neural arrangements. It would let us predict not only results, but also predict patterns of possible order."

"Seems to me the possible patterns are infinite."

"No, Sarah. They're limited by the nature of the building blocks—neurons, synaptic connections, and, so forth. With limited materials, you have structural limitations. You don't build skyscrapers out of modeling clay. And there is only a finite number of ways you can build atoms out of electrons, protons and neutrons. Similarly, brains are confined to the limitations of the things they're made of. We need a broad theory for defining the limits."

"Why?"

"Because . . ." He paused. Lisa felt his urge to explain his urgency, felt him suppress it, felt for a moment his loneliness in the awareness of his uniqueness and the way it isolated him from humanity.

"YOU must be doing new work," the girl offered, "if you feel the lack of such a theoretical approach. I just can't imagine an invariantive approach to psychology—or an all-defining set of laws for it, either. Why do you need such a psychological 'Relativity'?"

He hesitated, frowning down at his plate, watching a fly crawl around its rim. "I'm interested in —in the quantitative aspects of nerve impulses. I—I suspect that there can be such a thing as neural resonance."

She laughed politely and shook her head. "I'll stick to my empirical data-gathering, thank you."

Lisa felt him thinking:

"She could understand, if I could show her data. But my data is all subjective, experimental, personal. I share it with that Waverly woman, but she is only a social thinker, analytically shallow, refusing even to recognize facts. Why did it have to be her? She's flighty, emotional, and in a cultural rut. If she doesn't conform, she thinks she's nuts. But then at least she's a woman—and if this is really a mutation, we'll have to arrange for some children . . ."

Lisa gasped and sat bolt upright. Her shock revealed her presence to him, and he dropped his fork with a clatter.

"Lisa!"

She wrenched herself free of him abruptly. She angrily stalked about the house, slamming doors and muttering her rage. The nerve! The maddening, presumptuous, ill-mannered, self-centered, overly educated boor!

Arrange for some children in-

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deed! An impossible situation!

As her anger gathered momentum, she contacted him again—like a snake striking. Thought was thunder out of a dark cloud.

"I'm decent and I'm respectable, Mr. Grearly! I have a husband and three fine children and I love them, and you can go to hell! I never want to see you again or have you prowling around my mind. Get out and STAY out. And if you ever bother me again—I'll—I'll kill you."

He was outdoors, striding across the campus alone. She saw the gray buildings, immersed in twilight, felt the wind on his face, hated him. He was thinking nothing, letting himself follow her angry flow of thought. When she finished, his thoughts began like the passionate pleading of a poem.

He was imagining a human race with telepathic abilities, in near-perfect communication with one another. So many of the world's troubles could be traced to imperfect communication of ideas, to misunderstandings.

Then he thought briefly of Sarah — the nondescript laboratory girl he had taken to dinner—and Lisa realized he was in love with Sarah. There were sadness and resentment here. He couldn't have Sarah now, not if he were to be certain of perpetuating the mutant characteristic. The Waverly woman ought to be good for three or four children yet, before she reached middle age.

LISA stood transfixed by shock. Then he was thinking directly to her.

"I'm sorry. You're a beautiful, intelligent woman—but I don't love you. We're not alike. But I'm stuck with you and you're stuck with me, because I've decided it's going to be that way. I can't convince you since your thinking habits are already fixed, so I won't even try. I'm sorry it has to be against your will, but in any event it has to be. And now that I know what you're like, I don't dare wait—for fear you'll do something to mess things up."

"No!" she screamed, watching the scenery that moved past his field of vision.

He had left the campus and was walking up the street—toward her neighborhood. He was walking with the briskness of purpose. He was coming to her house.

"Call the police!" she thought, and tried to dissolve him out of her mind.

But this time he followed, clung to her thoughts, would not let her go. It was like two flashlight beams playing over a wall, one trying to escape, the other following its frantic circle of brightness.

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She staggered, groped her way toward the hall, which was confused with a superimposed image of a sidewalk and a street. A phantom automobile came out of the hall wall, drove through her and vanished. Double exposures. He stared at a street light and it blinded her. At last she found the phone, but he was laughing at her.

"*Eight seven six five twenty-one Mary had a little lamb seven seven sixty-seven yesterday was May March April . . .*"

He was deliberately filling her mind with confusion. She fumbled at the directory, trying to find the police, but he thought a confused jumble of numbers and symbols, and they scampered across the page, blurring the letters.

She whimpered and groped at the phone-dial, trying to get the operator, but he was doing something with his fingertips, and she couldn't get the feel of the dial.

On her third try, it finally worked.

"Information," said a pleasant impersonal voice.

She had to get the police! She had to say—

"*Pease porridge hot, pease porridge cold, pease porridge in the pot, nine days pretty polly parrot played peacefully plentiwise pease porridge . . .*"

He was jamming her speech

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centers with gibberish, and she blurted nonsense syllables into the mouthpiece.

"You'll have to speak more distinctly, madam. I can't understand you."

"Poress, Policer . . ."

"The police? Just a moment."

A series of jumbled sounds and visions clouded her mind. Then a masculine voice rumbled, "Desk, Sergeant Harris."

She found a clear path through the confusion and gasped, "Three-oh - oh - three Willow Drive — 'mergency — come quick — man going to—"

"Three - oh - oh - three Willow. Check. We'll have a car right over there."

She hung up quickly—or tried to—but she couldn't find the cradle. Then her vision cleared, and she screamed. She wasn't in the hall at all!

The telephone was an eggbeater!

HIS voice came through her trapped panic.

"You might as well give in," he told her with a note of sadness. *"I know how to mess you up like that, you see. And you haven't learned to retaliate yet. We're going to cooperate with this evolutionary trend, whether you like it or not—but it would be more pleasant if you agree to it."*

"No!"

"All right, but I'm coming anyway. I hoped it wouldn't be like this. I wanted to convince you gradually. Now I know that it's impossible."

He was still ten blocks away. She had a few minutes in which to escape. She bolted for the door. A black shadow-shape loomed up in the twilight, flung its arms wide, and emitted an apelike roar.

She yelped and darted back, fleeing frantically for the front. A boa constrictor lay coiled in the hall; it slithered toward her. She screamed again and raced toward the stairway.

She made it to the top and looked back. The living room was filling slowly with murky water. She rushed, shrieking into the bedroom and bolted the door.

She smelled smoke. Her dress was on fire! The flames licked up, searing her skin.

She tore at it madly, and got it off, but her slip was afire. She ripped it away, scooped up the flaming clothing on a transom hook, opened the screen, and dropped them out the window. Flames still licked about her, and she rolled up in the bed-clothing to snuff them out.

Quiet laughter.

"New syndrome," he called to her pleasantly. *"The patient confuses someone else's fantasy with her own reality. Not schizophrenia—duophrenia, maybe?"*

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She lay sobbing in hysterical desperation. He was just down the street now, coming rapidly up the walk. A car whisked slowly past. He felt her terrified despair and pitied her. The torment ceased.

She stayed there, panting for a moment, summoning spirit. He was nearing the intersection just two blocks south, and she could hear the rapid traffic with his ears.

Suddenly she clenched her eyes closed and gritted her teeth. He was stepping off the curb, walking across—

She imagined a fire engine thundering toward her like a juggernaut, rumbling and wailing. She imagined another car racing out into the intersection, with herself caught in the cross-fire. She imagined a woman screaming, "Look out, Mister!"

And then she was caught in his own responding fright, and it was easier to imagine. He was bolting for the other corner. She conjured a third car from another direction, brought it lunging at him to avoid the impending wreck. He staggered away from the phantom cars and screamed.

A real car confused the scene.

She echoed his scream. There was a moment of rending pain, and then the vision was gone. Brakes were still yowling two blocks away. Someone was running down the sidewalk. A part of her mind had heard the crashing thud. She was desperately sick.

And a sudden sense of complete aloneness told her that Grearly was dead. A siren was approaching out of the distance.

VOICES from the sidewalk: ". . . just threw a fit in the middle of the street . . . running around like crazy and hollering . . . it was a delivery truck . . . crushed his skull . . . nobody else hurt . . ."

After the street returned to normal, she arose and went to get a drink of water. But she stood staring at her sick white face in the mirror. There were crow's feet forming at the corners of her eyes, and her skin was growing tired, almost middle-aged.

It was funny that she should notice that now, at this strange moment. She had just killed a man in self-defense. And no one would believe it if she told the truth. There was no cause for guilt.

Was there?

Frank would be back soon, and everything would be the same again: peace, security, nice kids, nice home, nice husband. Just the way it always had been.

But something was already different. An emptiness. A loneliness of the mind that she had

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never before felt. She kept looking around to see if the lights hadn't gone dim, or the clock stopped ticking, or the faucet stopped dripping.

It was none of those things. The awful silence was within her.

Gingerly, she touched the soft spot in the top of her head and felt an utter aloneness. She closed her eyes and thought a hopeless plea to the Universe:

"Is there anybody else like me? Can anybody hear me?"

There was only complete silence, the silence of the voiceless void.

And for the first time in her life she felt the confinement of total isolation and knew it for what it was.

—WALTER M. MILLER, JR.

NOTICE ANYTHING?

Yes, GALAXY now has better paper and printing!

The paper needs no explanation, but the printing process should interest you. It's Offset Lithography, which is the newest and most flexible method of production printing.

Working with Lithography is somewhat like doing acrobatics on the Moon—there are practically no limits to what it can do. The clearer type and reproduction of art are only the more apparent advantages, but there are countless more.

For example, fine halftones to catch the delicate shading of wash drawings, photographs, daring art techniques and layout are all now made possible with this genuinely expressive printing method, plus others that we've only just begun to explore. Since Offset Lithography is basically a photographic process, it's about as unlimited as a camera is!

So, because we've barely started to experiment, you can see that this issue is merely the first step in the improvement of the magazine's appearance.

Lithography is much more expensive than our former printing method, of course. YOU made it possible by pushing GALAXY to the second sales spot in the science fiction field in less than two years. Giving you a handsomer magazine is one way of showing our appreciation.

Another is to assure you that GALAXY will not lower its literary standard a single inch while its physical appearance is being improved.

Any questions? Any comments or suggestions? Don't keep them to yourself—send them in!

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What Strange Powers Did The Ancients Possess?

EVERY important discovery relating to mind power, sound thinking and cause and effect, as applied to self-advancement, was known centuries ago, before the masses could read and write.

Much has been written about the wise men of old. A popular fallacy has it that their secrets of personal power and successful living were lost to the world. Knowledge of nature's laws, accumulated through the ages, is never lost. At times the great truths possessed by the sages were hidden from unscrupulous men in high places, but never destroyed.

Why Were Their Secrets Closely Guarded?

Only recently, as time is measured; not more than twenty generations ago, less than 1/100th of 1% of the earth's people were thought capable of receiving basic knowledge about the laws of life, for it is an elementary truism that knowledge is power and that power cannot be entrusted to the ignorant and the unworthy.

Wisdom is not readily attainable by the general public; nor recognized when right within reach. The average person absorbs a multitude of details about things, but goes through life without ever knowing where and how to acquire mastery of the fundamentals of the inner mind—that mysterious silent something which "whispers" to you from within.

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Your habits, accomplishments and weaknesses are the effects of causes. Your thoughts and actions are governed by fundamental laws. Example: The law of compensation is as fundamental as the laws of breathing, eating and sleeping. All fixed laws of nature are as fascinating to study as they are vital to understand for success in life.

You can learn to find and follow every basic law of life. You can begin at any time to discover a whole new world of interesting truths. You can start at once to awaken your inner powers of self-understanding and self-advancement. You can learn from one of the world's oldest institutions, first known in America in 1694. Enjoying the high regard of hundreds of leaders, thinkers and teachers, the order is known as the Rosicrucian Brotherhood. Its complete name is the "Ancient and Mystical Order Rosae Crucis," abbreviated by the initials "AMORC." The teachings of the Order are not sold, for it is not a commercial organization, nor is it a religious sect. It is a non-profit fraternity, a brotherhood in the true sense.

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A Full Length Galaxy Science Fiction Novel

The HOUSE of MANY WORLDS

By SAM MERWIN, Jr.

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For this house was actually a tangenitial point, or multiple gateway, to several worlds—worlds like our own, but varying slightly where similar crises and catastrophes in history had been resolved differently.

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Crossing into another world, aided only by their native ingenuity and the assistance of a fellow agent, the beauteous and knowable Juana, they encountered a succession of plots and counterplots, near brushes with death, and even romance. And before they completed their mission, they had to visit still a third world, where both tragedy and happiness awaited them.

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